U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

SEARCH REQUEST FORM

11686

Requestor's Name: Irene Marx

Serial Number: 10/077223

Date: 3/1/04

Phone: 20919

Art Unit: 1651

3E71

Search Topic:
Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevent citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevent claim(s).

Please search
- Inventors
(claims 1-3, 8 + 9 elected)
- composition of 2 or more Krebs cycle (citric acid cycle) intermediates
- 2 or more compounds of cl. 3.
- cl 3 products; + products of cl. 8
- composition as tablet, injection, infusion, inhalant, suppository, etc.

STAFF USE ONLY

Date completed: 3/4/04
Searcher:
Terminal time:
Elapsed time: 10 + 100
CPU time:
Total time:
Number of Searches:
Number of Databases:

Search Site
- ✓ STIC
- CM-1
- Pre-S

Type of Search
- N.A. Sequence
- A.A. Sequence
- Structure
- ✓ Bibliographic

Vendors
- IG
- ✓ STN
- Dialog
- APS
- Geninfo
- SDC
- DARC/Questel
- Other

PTO-1590 (9-90)

STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 116686

TO: Irene Marx **Location: 3a79** **Sunday, March 14, 2004** 3E71 **Art Unit: 1651** **Phone: 272-0919** **Serial Number: 10 / 077283**	**From: Jan Delaval** **Location: Biotech-Chem Library** **Rem 1A51** **Phone: 272-2504** **jan.delaval@uspto.gov**

Search Notes

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=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 10:59:31 ON 14 MAR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)
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FILE COVERS 1907 - 14 Mar 2004  VOL 140 ISS 12
FILE LAST UPDATED: 12 Mar 2004  (20040312/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


=> d his

     (FILE 'HOME' ENTERED AT 09:24:04 ON 14 MAR 2004)
               SET COST OFF

     FILE 'HCAPLUS' ENTERED AT 09:27:01 ON 14 MAR 2004
               E RATH M/AU
L1           84 S E15-E17,E3-E7
L2           20 S L1 AND P/DT
               E KREBS/CT
               E E7+ALL
               E E2+ALL
L3         4758 S E3
L4        11174 S E3-E8/BI
L5          339 S CIS ACONITATE
L6          272 S CIS ACONITIC ACID
L7          357 S CIS(L)ACONITIC ACID
L8       126392 S CITRIC ACID OR CITRATE
L9         9135 S ISOCITRATE OR ISOCITRIC ACID
L10          23 S OXALSUCCINATE OR OXALSUCCINIC ACID
L11         148 S OXALSUCCINATE OR OXALOSUCCINATE OR (OXALSUCCINIC OR OXALOSUCC
L12       10044 S (ALPHA OR ALFA)()(KETOGLUTARATE OR KETO GLUTARATE OR (KETOGLU
L13         267 S SUCCINYL()(COE OR COENZYME OR CO ENZYME)()A
L14          10 S SUCCINATE()(COE OR COENZYME OR CO ENZYME)()A
L15         477 S (SUCCINATE OR SUCCINYL)(L)(COE OR COENZYME OR CO ENZYME)()A
L16       72540 S SUCCINATE OR SUCCINIC ACID
L17       29738 S FUMARATE OR FUMARIC ACID
L18        2877 S L()(MALATE OR MALIC ACID)
L19        7367 S OXALACETATE OR OXALACETIC ACID
L20        1835 S ACETYL()(COE OR COENZYME OR CO ENZYME)()A
L21        9566 S ACETYL COA
L22        1140 S (SUCCINYL OR SUCCINATE)()COA
L23       60484 S PYRUVATE OR PYRUVIC ACID

     FILE 'REGISTRY' ENTERED AT 09:51:06 ON 14 MAR 2004
L24          12 S 110-15-6 OR 77-92-9 OR 585-84-2 OR 320-77-4 OR 1948-82-9 OR 3
L25       44084 S (110-15-6 OR 77-92-9 OR 585-84-2 OR 320-77-4 OR 1948-82-9 OR
L26       32099 S L25 NOT ((PMS OR CCS OR AYS OR MNS OR MXS OR IDS)/CI OR COMPD
L27       32083 S L26 NOT SQL/FA
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L28           2 S L24 AND NR>=1
L29           9 S L27 AND (604-98-8 OR 72-89-9)/CRN
L30       30372 S L27 AND NR>=1
L31        1711 S L27 NOT L30
L32        1720 S L29,L31

     FILE 'HCAPLUS' ENTERED AT 09:54:20 ON 14 MAR 2004
L33      114420 S L24 OR L32
L34      298526 S L3-L23,L33
L35        2987 S LIPOIC ACID
L36        1254 S LIPOAMIDE
L37           0 S ACETYLLIPOAMIDE OR ACETYLIPOAMIDE OR ACETYL LIPOAMIDE
L38           0 S LIPOAMIDE()(ACETYL OR ACETATE)
L39          16 S LIPOAMIDE(S)(ACETYL OR ACETATE OR ACETIC ACID)
L40           3 S L36(L)DIACET?
L41           0 S DIACETYLLIPOAMIDE
L42           1 S DIACETYL LIPOAMIDE
L43       93776 S LYSINE
L44        8921 S CARNITINE
L45       85808 S ASCORBATE OR ASCORBIC ACID
L46       20046 S THIAMINE
L47       12222 S RIBOFLAVIN
L48       19052 S NICOTINIC ACID
L49         920 S NIACINAMIDE
L50        8658 S PANTOTHENATE OR PANTOTHENIC ACID
L51        5835 S NICOTINAMIDE ADENINE DINUCLEOTIDE
L52        2268 S REDUCED NICOTINAMIDE ADENINE DINUCLEOTIDE
L53        2221 S NICOTINAMIDE ADENINE DINUCLEOTIDE PHOSPHATE
L54         925 S REDUCED NICOTINAMIDE ADENINE DINUCLEOTIDE PHOSPHATE
L55        2578 S QUINOLINATE OR QUINOLINIC ACID
L56        8784 S FLAVIN ADENINE DINUCLEOTIDE
L57           3 S REDUCED FLAVIN ADENINE DINUCLEOTIDE
L58          12 S REDUCED FLAVIN MONONUCLEOTIDE
L59        3297 S ADENOSINE DIPHOSPHATE
L60       13839 S ADENOSINE TRIPHOSPHATE
L61         496 S GUANOSINE DIPHOSPHATE
L62        1560 S GUANOSINE TRIPHOSPHATE
L63       39884 S (MG OR MAGNESIUM OR CA OR CALCIUM OR MN OR MANGANESE)()ION
L64          38 S (CU OR COPPER)()(FE OR IRON)()(SULFATE OR SULPHATE OR SO4)
L65       10486 S (CU OR COPPER OR CUPR?)(L)(FE OR FE2 OR FERRIC OR FERROUS OR
L66      562296 S MOLYBDENUM OR MO

     FILE 'REGISTRY' ENTERED AT 10:19:04 ON 14 MAR 2004
L67          22 S 89-00-4 OR 146-14-5 OR 146-17-8 OR 5666-16-0 OR 58-64-0 OR 56
L68          23 S 89-00-9 OR 146-14-5 OR 146-17-8 OR 5666-16-0 OR 58-64-0 OR 56
L69           8 S 62624-30-0 OR 10504-35-5 OR 37138-77-5 OR 53-84-9 OR 53-59-8
L70           2 S 10028-22-5 OR 7758-98-7
L71       22612 S 7664-93-9/CRN
L72         396 S L71 AND CU/ELS
L73         430 S L71 AND FE/ELS
L74          29 S L72 AND L73
L75          14 S L74 NOT AYS/CI
L76           5 S L75 NOT MXS/CI
L77           2 S L76 NOT (GRAPHITE OR MNS/CI)
L78         522 S L72,L73 NOT (AYS OR MXS OR MNS OR CCS)/CI
L79          81 S L78 AND 2/NC
L80          21 S L79 AND SALT
L81          18 S L80 NOT (59FE OR 55FE OR N/ELS)
L82          31 S L67-L69
                SEL RN
L83        5357 S E1-E31/CRN
L84         852 S L83 NOT ((AYS OR PMS OR MXS OR MNS OR CCS OR IDS)/CI OR COMPD
L85         903 S L70,L77,L81,L82,L84
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L86          418 S (MG OR CA OR MN OR MO)/MF
L87          115 S L86 NOT ISOTOPE
L88         1018 S L85,L87

     FILE 'HCAPLUS' ENTERED AT 10:28:29 ON 14 MAR 2004
L89       943555 S L88

     FILE 'REGISTRY' ENTERED AT 10:28:59 ON 14 MAR 2004
L90             1 S 940-69-2
L91           773 S S2C3/ES AND 1/NR AND (O AND N)/ELS
L92           111 S L91 AND ACET
L93            55 S L92 AND 1/NC
L94            35 S L93 NOT CCS/CI
L95            56 S L92 NOT L93
L96            33 S L95 NOT MXS/CI
L97            11 S L96 NOT RU/ELS
L98             4 S 940-69-2/CRN
L99           731 S L91 NOT RU/ELS
L100          666 S L99 NOT MXS/CI
L101          664 S L100 NOT CCS/CI
L102           70 S L101 AND ?ACET?/CNS
L103           47 S L102 AND 2/S
L104           23 S L103 AND 1/N
L105            1 S L104 AND C10H17NO2S2
L106            0 S 214554-83-3/CRN

     FILE 'HCAPLUS' ENTERED AT 10:34:27 ON 14 MAR 2004
L107            2 S L105
L108       943555 S L89,L107
L109        52269 S L35-L66,L108 AND L34
L110            4 S L1 AND L109
L111        52423 S L34 AND (L35-L66,L108 OR ASCORB?)
L112        52423 S L109,L111
L113            4 S L1 AND L112
L114            4 S L110,L113
L115         2405 S L112 AND (L24 OR L32)(L)(THU OR BAC OR DMA OR PAC OR PKT)/RL
L116         1860 S L115 AND (L88 OR L105)(L)(THU OR BAC OR DMA OR PAC OR PKT)/R
L117         1249 S L116 AND (PHARMACEUT? OR PHARMACOL?)/SC,SX
L118          674 S L117 AND COMPOSITION
L119          683 S L117 AND (COMBIN? OR MIX? OR SYNERG? OR FORMUL?)
L120          972 S L118,L119
L121          761 S L120 AND (PD<=20010214 OR PRD<=20010214 OR AD<=20010214)
L122            1 S L121 AND (BIOENERG? OR BIO(L)ENERG?)
L123            5 S L114,L122
                E RATH/PA,CS
L124            4 S E24-E30
L125            3 S L124 NOT RATH/TI
L126            7 S L123,L125
                E ENERGY/CT
L127            4 S L121 AND ENERGY/CW
                E ENERGY METABOLISM/CT
                E E4+ALL
L128         7453 S E3,E2
                E E7+ALL
L129         1653 S E1
L130       675742 S E3+NT
L131       199805 S E7+NT
L132           21 S L121 AND L128-L131
L133           29 S L126,L127,L132
L134           22 S L133 NOT L126
                E UREA CYCLE/CT
                E E3+ALL
L135          627 S E2
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L136          1 S L135 AND L121
                E METABOLISM/CT
                E E13+ALL
L137         19 S E2,E1+NT AND L121
                E METABOLISM/CT
                E E3+ALL
L138         15 S E1+NT AND L121
L139         25 S L137,L138
L140         21 S L139 NOT L133
                SEL DN AN 1 3 12 13 17 18
L141          6 S E1-E16
L142         13 S L126,L141
L143         13 S L142 AND L1-L23,L33-L66,L89,L107-L142
L144         10 S L143 AND (KREB OR ?SUCCIN? OR ?FUMAR? OR ?MALIC? OR ?MALATE?
L145         13 S L143,L144

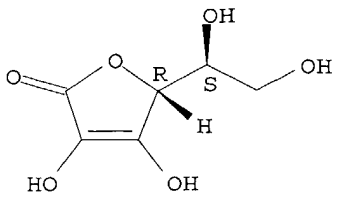
     FILE 'HCAPLUS' ENTERED AT 10:59:31 ON 14 MAR 2004

=> d all hitstr tot l145

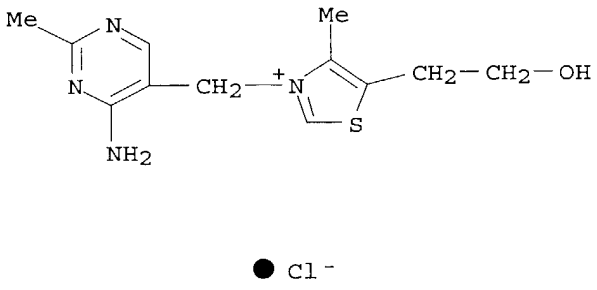
L145 ANSWER 1 OF 13  HCAPLUS  COPYRIGHT 2004 ACS on STN
AN   2004:182238  HCAPLUS
ED   Entered STN:  05 Mar 2004
TI   Metabolic uncoupling therapy
IN   McCleary, Edward Larry
PA   USA
SO   U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 749,584.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  A61K031-7076
     ICS  A61K031-685; A61K031-525; A61K031-195; A61K031-198
NCL  424094100; 514046000; 514251000; 514078000; 514356000; 514393000;
     514561000; 514350000; 514565000; 514250000
CC   1-12 (Pharmacology)
     Section cross-reference(s): 2, 18
FAN.CNT 2
     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ---------------   ----  --------      ---------------  --------
PI   US 2004043013      A1   20040304      US 2003-462958   20030617 <--
     US 2002132219      A1   20020919      US 2000-749584   20001228 <--
     US 6579866         B2   20030617
PRAI US 2000-749584     A2   20001228  <--
AB   A combination of chemical agents reduces reductive stress by
     limiting the accumulation of high-energy electrons potentially available
     to the electron transport chain.  A method of metabolic uncoupling therapy
     (MUT) comprises: analyzing a specific physiol. process involving reductive
     stress; identifying a plurality of MUT agents that modulate metabolic
     pathways by influencing electron flux; and formulating a
     combination of MUT agents that limits the accumulation of
     high-energy electrons potentially available to the electron transport
     chain.
ST   metabolic uncoupling therapy electron transport vitamin
IT   Amino acids
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (branched; metabolic uncoupling therapy)
IT   Metabolism, animal
        (high-energy electrons in; metabolic uncoupling therapy)
IT   Antibiotics
     Electron transport system, biological
       Metabolic pathways
        (metabolic uncoupling therapy)
```

IT Vitamins
RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(metabolic uncoupling therapy)
IT Albumins
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(metabolic uncoupling therapy)
IT Phosphatidylcholines
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(metabolic uncoupling therapy)
IT Sphingomyelins
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(metabolic uncoupling therapy)
IT Phenols
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polyphenols, nonpolymeric; metabolic uncoupling therapy)
IT Drug interactions
(**synergistic**; metabolic uncoupling therapy)
IT 50-69-1, Ribose **50-81-7**, vitamin C 50-99-7, Glucose 51-84-3, Acetylcholine 54-47-7, Pyridoxal phosphate 56-40-6, Glycine 56-41-7, L-Alanine 56-45-1, L-Serine 56-84-8, Aspartic acid 56-85-9, Glutamine 57-00-1, Creatine 58-85-5, Biotin 59-30-3 **59-43-8**, vitamin B1 62-49-7, Choline 65-23-6, Pyridoxine 68-19-9, vitamin B12 70-51-9 74-79-3, Arginine **79-83-4**, vitamin B3 **83-88-5**, **Riboflavin** 87-89-8, (myo)Inositol **98-92-0**, vitamin B3 107-35-7, Taurine 107-43-7, Trimethylglycine **127-17-3** **144-23-0**, Magnesium **citrate** 144-55-8, Carbonic acid monosodium salt 303-98-0, coenzyme Q10 **541-15-1**, **Carnitine** 541-50-4 563-24-6 1406-16-2, vitamin D 1406-18-4, vitamin E 3040-38-8, Acetyl-L-**carnitine**) 6829-55-6D, Tocotrienol, analogs **7439-95-4**, Magnesium 7440-09-7, Potassium 7440-47-3, Chromium **7440-70-2**, Calcium 7647-14-5, Sodium chloride 7782-49-2, Selenium 8059-24-3, vitamin B6 9004-10-8, Insulin 17298-37-2, Propionyl **carnitine** 27750-10-3, **Hydroxycitric** acid 27774-13-6, Vanadyl sulfate 29908-03-0 32839-18-2 32839-30-8 57828-26-9, **Lipoic acid** 102518-79-6, Huperzine A
RL: **PAC (Pharmacological activity)**; **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(metabolic uncoupling therapy)
IT **50-81-7**, vitamin C **59-43-8**, vitamin B1 **79-83-4**, vitamin B3 **83-88-5**, **Riboflavin** **98-92-0**, vitamin B3 **127-17-3** **144-23-0**, Magnesium **citrate** **541-15-1**, **Carnitine** **7439-95-4**, Magnesium **7440-70-2**, Calcium
RL: **PAC (Pharmacological activity)**; **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(metabolic uncoupling therapy)
RN 50-81-7 HCAPLUS
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

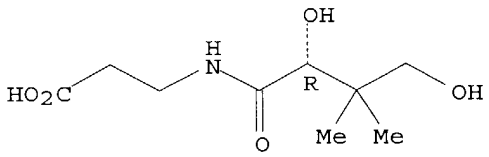


RN 59-43-8 HCAPLUS
CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methyl- chloride (9CI) (CA INDEX NAME)



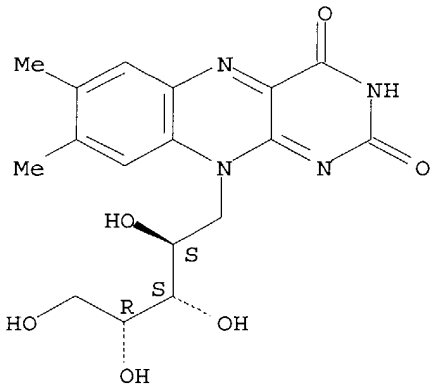
RN 79-83-4 HCAPLUS
CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

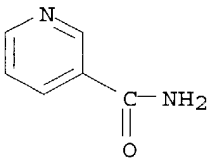


RN 83-88-5 HCAPLUS
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

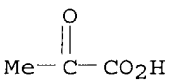
Absolute stereochemistry.



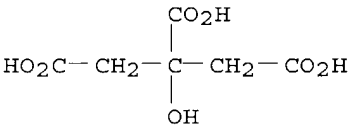
RN 98-92-0 HCAPLUS
CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 127-17-3 HCAPLUS
CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)

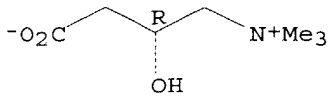


RN 144-23-0 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (1:1) (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

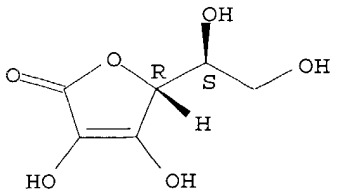
L145 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:173419 HCAPLUS
DN 138:221848
ED Entered STN: 07 Mar 2003
TI Preparation of novel **ascorbic acid lysine** and proline derivatives
IN Roomi, Waheed; Netke, Shrirang; Ivanov, Vadim; Niedzwiecki, Aleksandra
PA **Rath, Matthias, USA**
SO PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-34
ICS C07D305-12
CC 34-3 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 33, 62
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003018000	A1	20030306	WO 2002-US27060	20020823
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003119753	A1	20030626	US 2002-226588	20020823

PRAI US 2001-314857P P 20010824
AB L-**Ascorbic acid** esters with **lysine** or **lysine** moieties or proline or proline moieties were prepared for use in compns. used to prevent the degradation of extracellular matrix, stabilize connective tissue, as antioxidants, and for treating damage to skin. Thus, treating 8 mmol L-**ascorbic acid** with 10 mmol L-**lysine** in 20 mL sulfuric acid overnight at room temperature afforded L-ascorbyl-6-**lysine.**
ST **ascorbic acid** ester **lysine** proline prepn

dermatol application
IT Amino acids, preparation
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**ascorbate** esters; preparation of novel **ascorbic acid** lysinate or prolinate derivs.)
IT Antioxidants
Connective tissue
Extracellular matrix
(preparation of novel **ascorbic acid** lysinate or prolinate derivs.)
IT 25213-33-6DP, Poly[(2S)-1,2-pyrrolidinediylcarbonyl], reaction products with 6-deoxybromo **ascorbate** or 6-deoxyamino **ascorbate**
38000-06-5DP, reaction products with 6-deoxybromo **ascorbate** or 6-deoxyamino **ascorbate** 62983-44-2DP, reaction products with polylysine or polyproline 85366-70-7DP, reaction products with polylysine or polyproline 498576-94-6P 498576-96-8P 500893-69-6P
500893-70-9P 500893-71-0P 500893-72-1P 500893-73-2P 500893-74-3P
500893-75-4P 500893-76-5P 500893-77-6DP, reaction products with polylysine 500893-78-7DP, reaction products with polyproline
500893-79-8P 500893-80-1P 500893-81-2P 500893-82-3P 500893-83-4P
500893-84-5P 500893-85-6P 500893-86-7P 500893-87-8P 500893-88-9P
500893-89-0P 500893-90-3P 500893-91-4P 500893-92-5P 500893-93-6P
500893-94-7P 500893-95-8P 500893-96-9P 500893-97-0P 500893-98-1P
500893-99-2P 500894-00-8P 500894-02-0P 500894-03-1P 500894-04-2P
500894-05-3P 500894-06-4P 500903-96-8P 500903-97-9P 500903-98-0P
500903-99-1P 500904-02-9P 500904-05-2P 500904-06-3P 500904-07-4P
500904-08-5P 500904-09-6P 500904-10-9P
RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of novel **ascorbic acid** lysinate or prolinate derivs.)
IT **50-81-7**, **Ascorbic acid**, reactions
56-87-1, L **Lysine**, reactions 147-85-3, L Proline, reactions 15042-01-0, 5 6 Isopropylidene **ascorbic acid** 62983-44-2 85366-70-7 175446-63-6 500894-01-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of novel **ascorbic acid** lysinate or prolinate derivs.)
RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Khaled; US 5977073 A 1999 HCAPLUS
IT **50-81-7**, **Ascorbic acid**, reactions
56-87-1, L **Lysine**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of novel **ascorbic acid** lysinate or prolinate derivs.)
RN 50-81-7 HCAPLUS
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

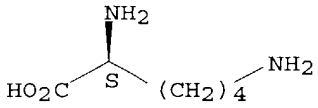
Absolute stereochemistry.



RN 56-87-1 HCAPLUS

CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L145 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **2003:169981** HCAPLUS
DN **138:180774**
ED Entered STN: 06 Mar 2003
TI **Compositions** of flavonoids and **synergists** for use as cytoprotectants and methods of making and using them
IN Brown, Lesley A.; Miller, Guy
PA Galileo Laboratories, Inc., USA
SO U.S., 28 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM A61K007-42
NCL 424059000; 424401000; 514456000; 514045000; 514046000; 514047000; 514048000; 514028000; 536026700; 536027600
CC 1-12 (**Pharmacology**)
Section cross-reference(s): **63**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 6528042	B1	20030304	US 2000-684607	20001006 <--
PRAI US 1999-159003P	P	19991008 <--		

AB Non-naturally-occurring **compns.** for use in amelioration of disruption of energy metabolism secondary to stress are described. These **compns.** comprise a flavonoid or derivative thereof and a **synergist. Synergists** include, but are not limited to, amino acids, carbohydrates, **carnitines**, flavonoids, nucleosides, and tocopherols and/or derivs. thereof. Methods of making these **compns.** and methods of ameliorating disruption of energy metabolism secondary to stress, comprising administering such **synergistic compns.**, are also disclosed.
ST flavonoid **synergist combination** cytoprotectant energy metab stress; amino acid flavonoid **combination** cytoprotectant energy metab stress; carbohydrate flavonoid **combination** cytoprotectant energy metab stress; **carnitine** flavonoid **combination** cytoprotectant energy metab stress; nucleoside flavonoid **combination** cytoprotectant energy metab stress; tocopherol flavonoid **combination** cytoprotectant energy metab stress
IT Animal cell line
(GCL1; flavonoid-**synergist combination composition** for cytoprotectant)
IT Animal tissue culture
(chemical insult; flavonoid-**synergist combination composition** for cytoprotectant)
IT Nucleosides, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(derivs.; flavonoid-**synergist combination composition** for cytoprotectant)
IT Toxicity
(drug, stress from; flavonoid-**synergist combination**

composition for cytoprotectant)
IT **Metabolism**
(energy; flavonoid-**synergist combination composition** for cytoprotectant)
IT Aging, animal
Cytoprotective agents
Cytotoxicity
Exercise
Stress, animal
(flavonoid-**synergist combination composition** for cytoprotectant)
IT Amino acids, biological studies
Carbohydrates, biological studies
Flavonoids
Nucleosides, biological studies
Tocopherols
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(flavonoid-**synergist combination composition** for cytoprotectant)
IT Nutrition, animal
(nutritional **composition**; flavonoid-**synergist combination composition** for cytoprotectant)
IT Cell death
(reduction; flavonoid-**synergist combination composition** for cytoprotectant)
IT Chemicals
(stress from chemical insult; flavonoid-**synergist combination composition** for cytoprotectant)
IT Environment
(stress from environmental alteration; flavonoid-**synergist combination composition** for cytoprotectant)
IT Toxins
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(stress from exposure to; flavonoid-**synergist combination composition** for cytoprotectant)
IT Physiology, animal
(stress from phsysiol. condition; flavonoid-**synergist combination composition** for cytoprotectant)
IT Surgery
(stress from pre-surgical preparation or post-surgical conditions; flavonoid-**synergist combination composition** for cytoprotectant)
IT Chemotherapy
Fever and Hyperthermia
Hypothermia
Hypoxia, animal
Ionizing radiation
(stress from; flavonoid-**synergist combination composition** for cytoprotectant)
IT Drug interactions
(**synergistic**; flavonoid-**synergist combination composition** for cytoprotectant)
IT 56-40-6, Glycine, biological studies 56-41-7, L-Alanine, biological studies 58-61-7, Adenosine, biological studies 58-63-9, Inosine 59-02-9, α-Tocopherol 59-23-4, Galactose, biological studies 117-39-5, Quercetin 119-13-1, (+)-δ-Tocopherol **127-17-3**, biological studies 153-18-4, Rutin 480-40-0, Chrysin 486-66-8, Daidzein 488-69-7, Fructose-1,6-bisphosphate 491-70-3, Luteolin 491-80-5, Biochanin A 520-26-3, Hesperidin 520-27-4, Diosmin 520-33-2, Hesperetin **541-15-1**, **Carnitine** **541-15-1D**, **Carnitine**, derivs. 616-91-1, N-Acetylcysteine 3040-38-8, Acetylcarnitine 5556-48-9, Ribulose

7616-22-0, γ-Tocopherol 20762-30-5, ADP-ribose 35054-79-6, Hydroxybutyric acid 36687-82-8, biological studies
RL: **PAC (Pharmacological activity)**; **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(flavonoid-**synergist combination composition** for cytoprotectant)

RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD

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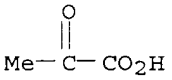
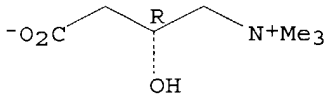
IT **127-17-3**, biological studies **541-15-1**, **Carnitine**

541-15-1D, Carnitine, derivs.
RL: **PAC (Pharmacological activity)**; **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(flavonoid-**synergist combination composition** for cytoprotectant)
RN 127-17-3 HCAPLUS
CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



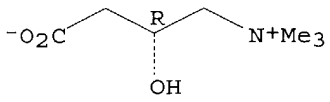
RN 541-15-1 HCAPLUS
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 541-15-1 HCAPLUS
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L145 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:5244 HCAPLUS
DN 138:49962
ED Entered STN: 03 Jan 2003
TI **Composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells
IN **Rath, Matthias**
PA USA
SO U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DT **Patent**
LA English
IC ICM A61K033-06
ICS A61K031-375; A61K031-198
NCL 424682000; 514474000; 514565000
CC 1-12 (**Pharmacology**)
Section cross-reference(s): **63**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2003003162	A1	20030102	US 2001-885347	20010619
US 6686340	B2	20040203		
PRAI US 2001-885347		20010619		

AB The invention relates to a method of administering to a human subject a

composition comprising a vitamin, an amino acid and a trace element for the prevention and treatment of health conditions caused by constriction of smooth muscle cells in organs of the human body like high blood pressure, asthma, glaucoma and tinnitus. The **composition** comprises a vitamin such as **ascorbic acid**, an amino acid such as arginine, and a trace element such as magnesium.

ST smooth muscle constriction disorder vitamin amino acid trace element; asthma tinnitus hypertension vitamin amino acid trace element therapy

IT Heart, disease
(angina pectoris; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Flavonoids
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(citrus; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Asthma
Glaucoma (disease)
Human
Hypertension
Muscle contraction
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Amino acids, biological studies
Carotenes, biological studies
Trace elements, biological studies
Vitamins
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Fertility
(disorder; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Sexual behavior
(impotence; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
(infusions; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
(inhalants; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
(injections; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Lung, disease
(obstructive; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Ovarian cycle
(premenstrual syndrome; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Muscle
(smooth; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Muscle, disease
(spasm, of ureter, urethra, stomach, gall duct; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
(suppositories; **composition** and method for prevention and

treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems
(tablets; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Ear, disease
(tinnitus; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Tocopherols
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(β,γ, δ **mix**; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT **7439-96-5D**, Manganese, chelates 7440-09-7D, Potassium, chelates
RL: **PAC (Pharmacological activity)**; BIOL (Biological study)
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT **50-81-7**, L-**Ascorbic acid**, biological studies
52-90-4, L-Cysteine, biological studies 56-40-6D, Glycine, chromium complexes 56-40-6D, Glycine, **molybdenum** complexes
56-87-1, L-**Lysine**, biological studies 58-85-5, Biotin
59-02-9, D-α-Tocopherol 59-30-3, Folic Acid, biological studies
59-43-8, **Thiamine**, biological studies **59-67-6**,
Niacin, biological studies 65-23-6, Pyridoxine 67-97-0,
Cholecalciferol 68-19-9, Cyanocobalamin 74-79-3, Arginine, biological studies **83-88-5**, **Riboflavin**, biological studies
87-89-8, Inositol **98-92-0**, **Niacinamide** 127-40-2,
Lutein **137-08-6** 137-66-6, **Ascorbyl** Palmitate
144-23-0, Magnesium **Citrate** 147-85-3, L-Proline,
biological studies 303-98-0, Coenzyme Q10 432-70-2, α-Carotene
472-70-8, Kryptoxanthin **541-15-1**, L-**Carnitine**
3211-76-5, L-Selenomethionine **5743-27-1**, Calcium **Ascorbate** 7235-40-7, β-Carotene **7439-95-4**,
Magnesium, biological studies **7439-98-7D**, **Molybdenum**,
complexes with glycine 7440-47-3D, Chromium, complexes with glycine
7693-13-2, Calcium **Citrate** 7757-93-9, Dicalcium
Phosphate 13479-54-4, Copper Glycinate 14281-83-5, Zinc Glycinate
14783-68-7 **15431-40-0**, Magnesium **Ascorbate**
15595-35-4, Arginine hydrochloride 35947-07-0, Calcium Glycinate
72746-33-9, ζ-Carotene 174882-69-0, Pycnogenol
RL: **PAC (Pharmacological activity)**; **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT **7439-96-5D**, Manganese, chelates
RL: **PAC (Pharmacological activity)**; BIOL (Biological study)
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

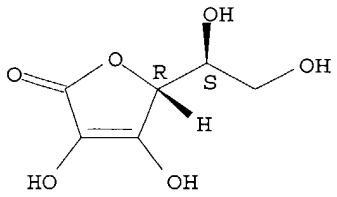
Mn

IT **50-81-7**, L-**Ascorbic acid**, biological studies
56-87-1, L-**Lysine**, biological studies **59-43-8**,
Thiamine, biological studies **59-67-6**, Niacin, biological studies **83-88-5**, **Riboflavin**, biological studies
98-92-0, **Niacinamide 137-08-6 144-23-0**
, Magnesium **Citrate 541-15-1**, L-**Carnitine**
5743-27-1, Calcium **Ascorbate 7439-95-4**,

Magnesium, biological studies **7439-98-7D**, **Molybdenum**, complexes with glycine **7693-13-2**, Calcium **Citrate** **15431-40-0**, Magnesium **Ascorbate**
RL: **PAC (Pharmacological activity)**; **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

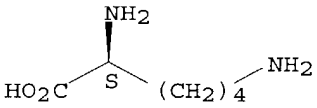
RN 50-81-7 HCAPLUS
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

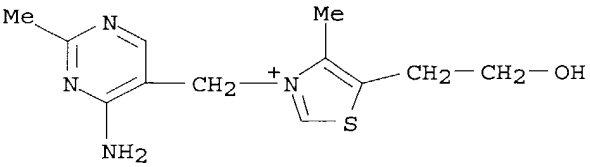


RN 56-87-1 HCAPLUS
CN L-Lysine (9CI) (CA INDEX NAME)

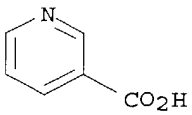
Absolute stereochemistry.



RN 59-43-8 HCAPLUS
CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methyl- chloride (9CI) (CA INDEX NAME)



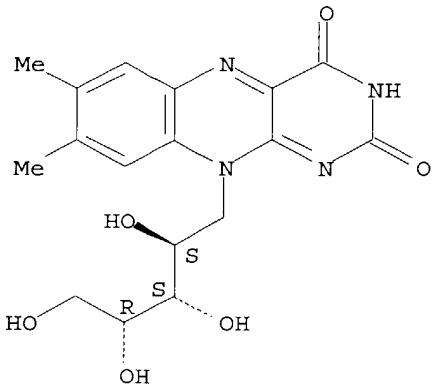
RN 59-67-6 HCAPLUS
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)



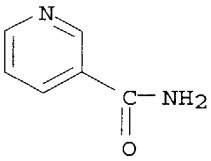
RN 83-88-5 HCAPLUS

CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

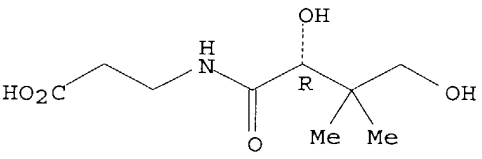


RN 98-92-0 HCAPLUS
CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



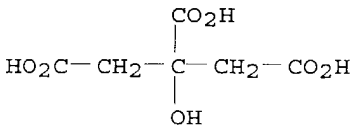
RN 137-08-6 HCAPLUS
CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]-, calcium salt (2:1) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



●1/2 Ca

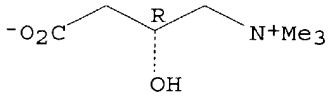
RN 144-23-0 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (1:1) (9CI) (CA INDEX NAME)



● Mg

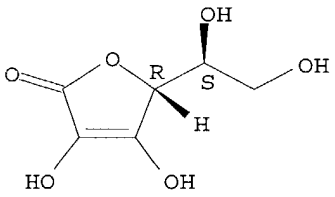
RN 541-15-1 HCAPLUS
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 5743-27-1 HCAPLUS
CN L-Ascorbic acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●1/2 Ca

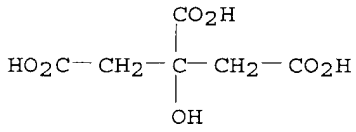
RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7439-98-7 HCAPLUS
CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

Mo

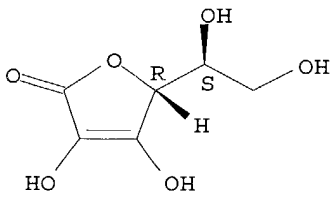
RN 7693-13-2 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, calcium salt (9CI) (CA INDEX NAME)



●x Ca

RN 15431-40-0 HCAPLUS
CN L-Ascorbic acid, magnesium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●1/2 Mg

L145 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:637513 HCAPLUS
DN 137:190730
ED Entered STN: 23 Aug 2002
TI **Compositions** of therapeutic biochemical compounds involved in **bioenergy** metabolism of cells
PA **Rath, Matthias, Neth.**
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-194
ICS A61K031-122; A61K038-41; A61K031-198
CC 63-6 (**Pharmaceuticals**)
Section cross-reference(s): **1**, 66
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2002064129	A2	20020822	WO 2002-EP1545	20020214	<--
	WO 2002064129	A3	20030508			
	W: AE, AU, BR, CA, CN, CU, CZ, EE, HR, HU, ID, IL, IN, JP, KR, LT, LV, MK, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TR, UA, ZA					
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR					
	US 2002173546	A1	20021121	US 2002-77283	20020214	<--
	BR 2002003902	A	20030128	BR 2002-3902	20020214	<--
	EP 1368017	A2	20031210	EP 2002-719835	20020214	<--
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	NO 2002004536	A	20020920	NO 2002-4536	20020920	<--
PRAI	US 2001-268825P	P	20010214	<--		

WO 2002-EP1545 W 20020214

AB A **composition** of biochem. compds. involved in **bioenergy** metabolism of cells and a method of use in prevention and therapy of diseases are disclosed. The **composition** may contain 2 or more of the following biochem. substances, e.g., **succinate**, **fumarate**, **L-malate**, α -**ketoglutarate**, irresp. of their amts. for the improvement of cellular energy metabolism These compds. may be administered at 0.001-100,000 mg.

ST **bioenergy** metab cell biochem therapeutic

IT **Energy metabolism, animal**
Human
Tricarboxylic acid cycle
Urea cycle
(**compns.** of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Drug delivery systems
(infusions; **compns.** of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Drug delivery systems
(inhalants; **compns.** of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Drug delivery systems
(injections; **compns.** of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Ubiquinones
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(reduced; **compns.** of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Drug delivery systems
(suppositories; **compns.** of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

IT Drug delivery systems
(tablets; **compns.** of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)

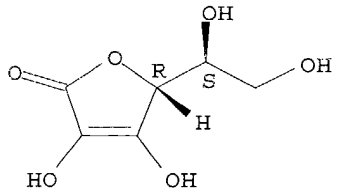
IT **50-81-7**, **Ascorbic acid**, biological studies **53-57-6** **53-59-8**, **Nicotinamide-Adenine Dinucleotide Phosphate** **53-84-9**, **Nicotinamide-Adenine Dinucleotide** **56-65-5**, **Adenosine Triphosphate**, biological studies 56-84-8, L-Aspartic acid, biological studies **56-87-1**, **Lysine**, biological studies **58-64-0**, **Adenosine Diphosphate**, biological studies **58-68-4**, **Reduced Nicotinamide Adenine Dinucleotide** **59-43-8**, **Thiamine**, biological studies **59-67-6**, **Nicotinic Acid**, biological studies 70-26-8, Ornithine **72-89-9**, **Acetyl-Coenzyme A** 74-79-3, Arginine, biological studies **77-92-9**, **Citric acid**, biological studies **79-83-4**, **Pantothenic acid** **83-88-5**, **Riboflavin**, biological studies **86-01-1**, **Guanosine Triphosphate** **89-00-9**, 2,3-Pyridinedicarboxylic acid **97-67-6**, **L-Malic acid** **98-92-0**, **Niacinamide** **110-15-6**, **Succinic acid**, biological studies **110-17-8**, **Fumaric acid**, biological studies **127-17-3**, **Pyruvic acid**, biological studies **146-14-5**, **Flavin-Adenine Dinucleotide** **146-17-8**, Flavin Mononucleotide **146-91-8**, **Guanosine Diphosphate** 303-98-0, Coenzyme Q-10 **320-77-4**, **Isocitric acid** **328-42-7**, **Oxalacetic acid** **328-50-7**, α -**Ketoglutaric acid** 372-75-8, Citrulline **541-15-1**, **Carnitine** **585-84-2**, **cis-Aconitic acid** **604-98-8**,

Succinyl-Coenzyme A 940-69-2,
Lipoamide 1077-28-7, 1,2-Dithiolane-3-pentanoic acid
1948-82-9, **Oxalosuccinic acid** 2387-71-5
5666-16-0, **Reduced Flavin**
Mononucleotide 7439-95-4, Magnesium, biological studies
7439-96-5, Manganese, biological studies **7439-98-7**,
Molybdenum, biological studies 7440-50-8, Copper, biological
studies **7440-70-2**, Calcium, biological studies
10124-49-9, Iron-Sulfate 14875-96-8, Heme b 26598-29-8, Heme c
57560-10-8, Heme a 59890-88-9
RL: **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**compns.** of therapeutic biochem. compds. involved in
bioenergy metabolism of cells)

IT **50-81-7**, **Ascorbic acid**, biological studies
53-57-6 53-59-8, **Nicotinamide-Adenine**
Dinucleotide Phosphate 53-84-9,
Nicotinamide-Adenine Dinucleotide
56-65-5, **Adenosine Triphosphate**, biological
studies **56-87-1**, **Lysine**, biological studies
58-64-0, **Adenosine Diphosphate**, biological
studies **58-68-4**, **Reduced Nicotinamide**
Adenine Dinucleotide 59-43-8, **Thiamine**
, biological studies **59-67-6**, **Nicotinic Acid**
, biological studies **72-89-9**, **Acetyl-Coenzyme**
A 77-92-9, **Citric acid**, biological
studies **79-83-4**, **Pantothenic acid**
83-88-5, **Riboflavin**, biological studies **86-01-1**
, **Guanosine Triphosphate 89-00-9**,
2,3-Pyridinedicarboxylic acid **97-67-6**, **L-Malic**
acid 98-92-0, **Niacinamide 110-15-6**,
Succinic acid, biological studies **110-17-8**,
Fumaric acid, biological studies **127-17-3**,
Pyruvic acid, biological studies **146-14-5**,
Flavin-Adenine Dinucleotide 146-17-8
, Flavin Mononucleotide **146-91-8**, **Guanosine**
Diphosphate 320-77-4, **Isocitric acid**
328-42-7, **Oxalacetic acid 328-50-7**,
α -**Ketoglutaric acid 541-15-1**,
Carnitine 585-84-2, **cis-Aconitic**
acid 604-98-8, **Succinyl-Coenzyme**
A 940-69-2, **Lipoamide 1948-82-9**,
Oxalosuccinic acid 5666-16-0, **Reduced**
Flavin Mononucleotide 7439-95-4, Magnesium,
biological studies **7439-96-5**, Manganese, biological studies
7439-98-7, **Molybdenum**, biological studies
7440-70-2, Calcium, biological studies **10124-49-9**,
Iron-Sulfate
RL: **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**compns.** of therapeutic biochem. compds. involved in
bioenergy metabolism of cells)

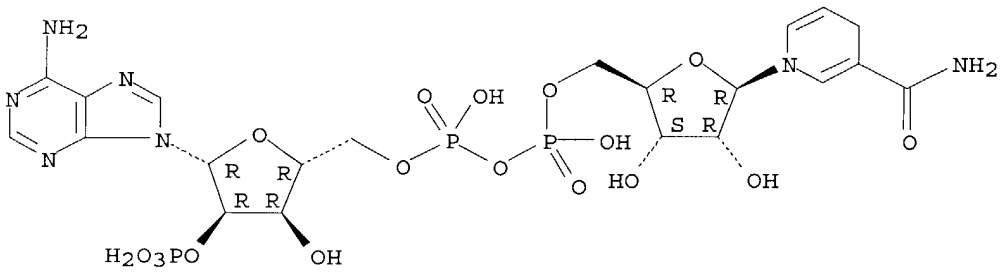
RN 50-81-7 HCAPLUS
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 53-57-6 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate), 2'-(dihydrogen phosphate), P'→5'-ester with 1,4-dihydro-1-β-D-ribofuranosyl-3-pyridinecarboxamide (9CI) (CA INDEX NAME)

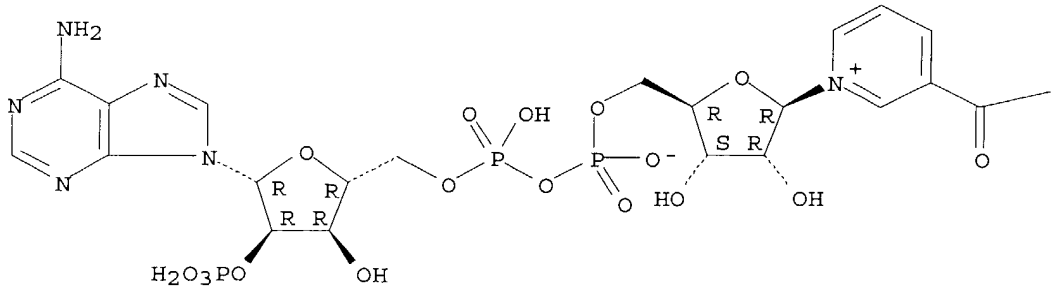
Absolute stereochemistry.



RN 53-59-8 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate), 2'-(dihydrogen phosphate), P'→5'-ester with 3-(aminocarbonyl)-1-β-D-ribofuranosylpyridinium, inner salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

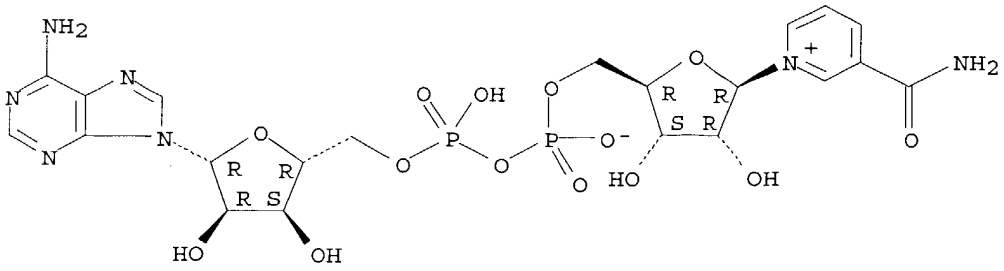


PAGE 1-B

RN 53-84-9 HCAPLUS

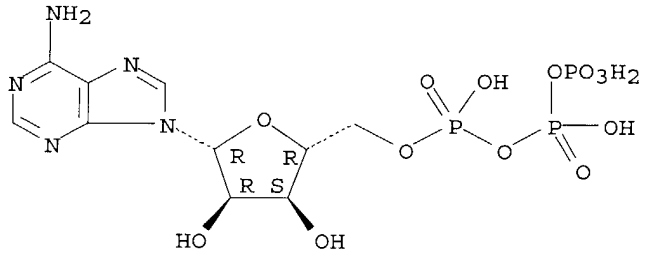
CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with 3-(aminocarbonyl)-1-β-D-ribofuranosylpyridinium, inner salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.



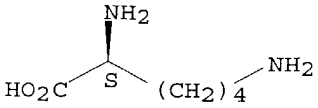
RN 56-65-5 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



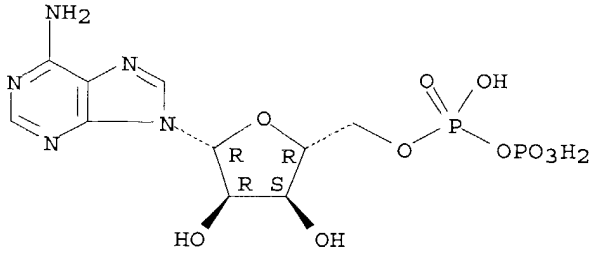
RN 56-87-1 HCAPLUS
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 58-64-0 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

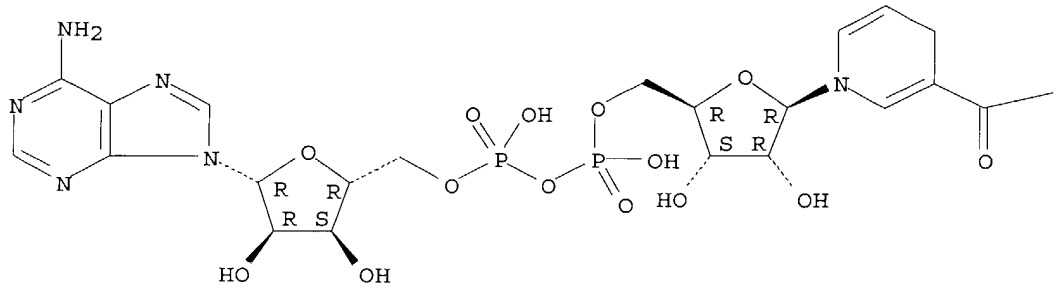
Absolute stereochemistry.



RN 58-68-4 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with 1,4-dihydro-1-β-D-ribofuranosyl-3-pyridinecarboxamide (9CI) (CA INDEX NAME)

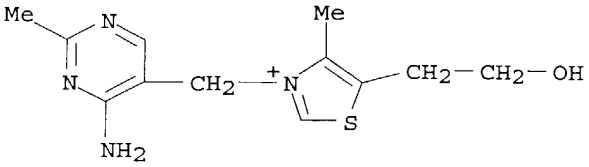
Absolute stereochemistry.

PAGE 1-A

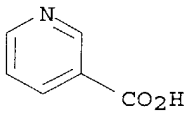


PAGE 1-B

RN 59-43-8 HCAPLUS
CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methyl- chloride (9CI) (CA INDEX NAME)



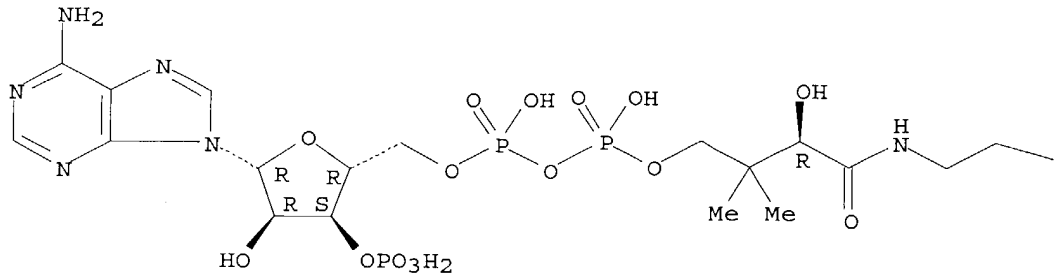
RN 59-67-6 HCAPLUS
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)



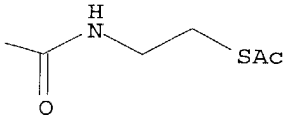
RN 72-89-9 HCAPLUS
CN Coenzyme A, S-acetate (6CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

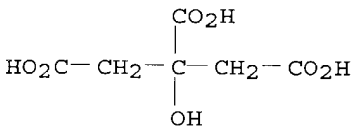
PAGE 1-A



PAGE 1-B

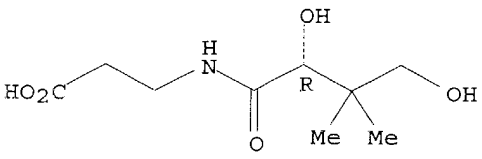


RN 77-92-9 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (9CI) (CA INDEX NAME)



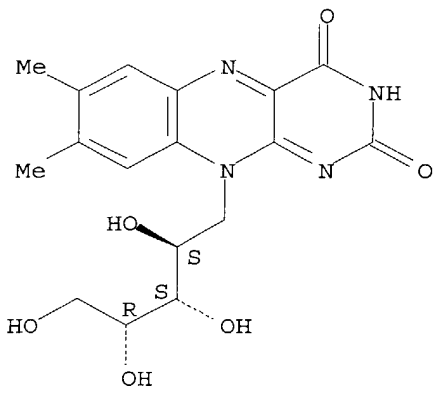
RN 79-83-4 HCAPLUS
CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



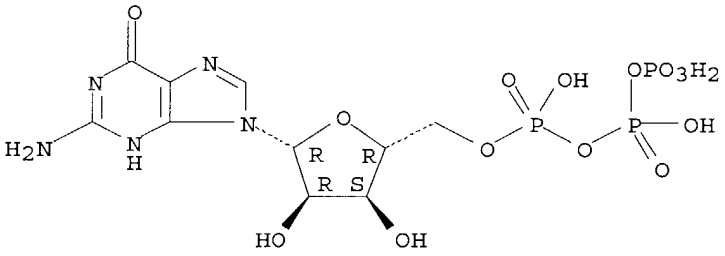
RN 83-88-5 HCAPLUS
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

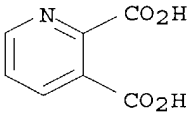


RN 86-01-1 HCAPLUS
CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

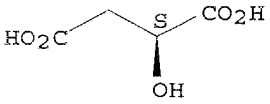


RN 89-00-9 HCAPLUS
CN 2,3-Pyridinedicarboxylic acid (8CI, 9CI) (CA INDEX NAME)

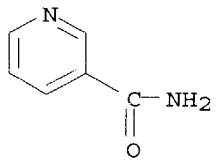


RN 97-67-6 HCAPLUS
CN Butanedioic acid, hydroxy-, (2S)- (9CI) (CA INDEX NAME)

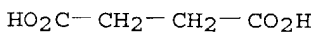
Absolute stereochemistry. Rotation (-).



RN 98-92-0 HCAPLUS
CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)

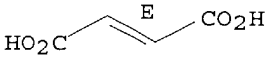


RN 110-15-6 HCAPLUS
CN Butanedioic acid (9CI) (CA INDEX NAME)

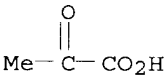


RN 110-17-8 HCAPLUS
CN 2-Butenedioic acid (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

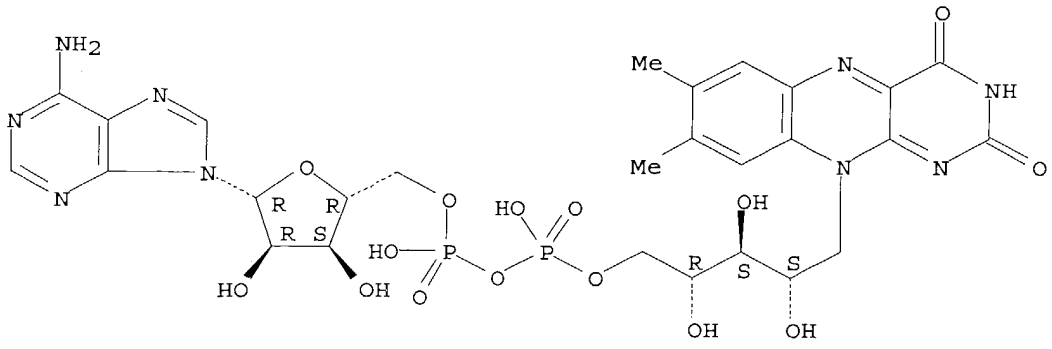


RN 127-17-3 HCAPLUS
CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



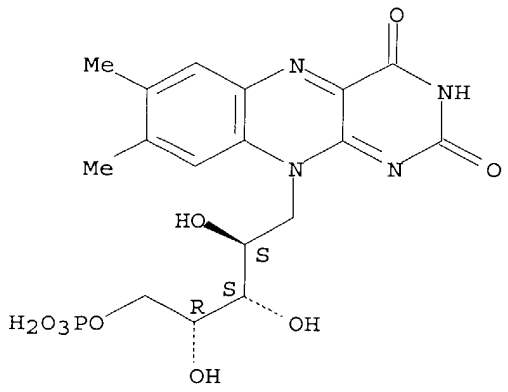
RN 146-14-5 HCAPLUS
CN Riboflavin 5'-(trihydrogen diphosphate), P'→5'-ester with adenosine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



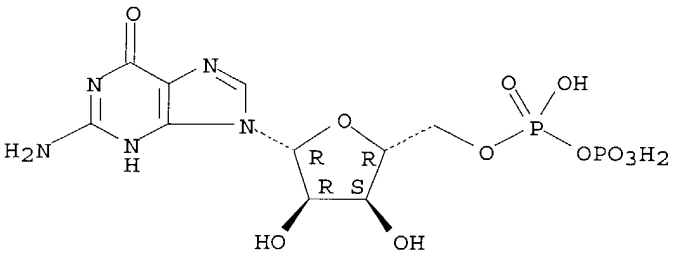
RN 146-17-8 HCAPLUS
CN Riboflavin 5'-(dihydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

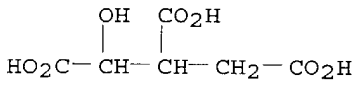


RN 146-91-8 HCAPLUS
CN Guanosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

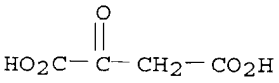
Absolute stereochemistry.



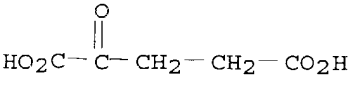
RN 320-77-4 HCAPLUS
CN Pentaric acid, 3-carboxy-2,3-dideoxy- (9CI) (CA INDEX NAME)



RN 328-42-7 HCAPLUS
CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)



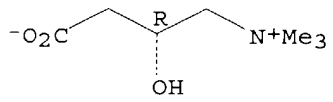
RN 328-50-7 HCAPLUS
CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS

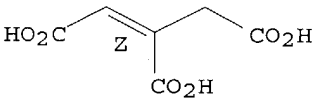
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 585-84-2 HCAPLUS
CN 1-Propene-1,2,3-tricarboxylic acid, (1Z)- (9CI) (CA INDEX NAME)

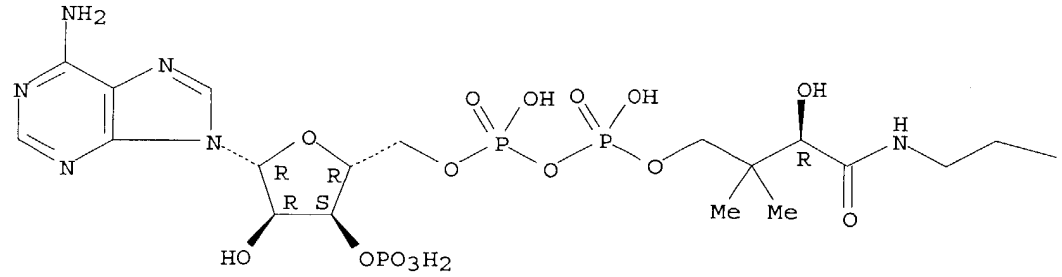
Double bond geometry as shown.



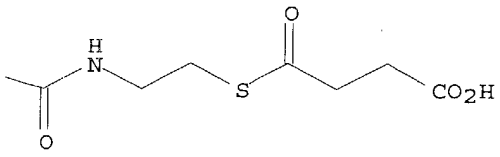
RN 604-98-8 HCAPLUS
CN Coenzyme A, S-(hydrogen butanedioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

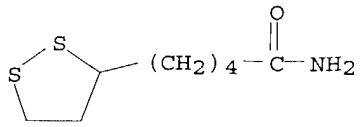
PAGE 1-A



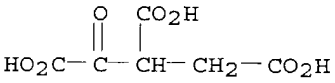
PAGE 1-B



RN 940-69-2 HCAPLUS
CN 1,2-Dithiolane-3-pentanamide (9CI) (CA INDEX NAME)

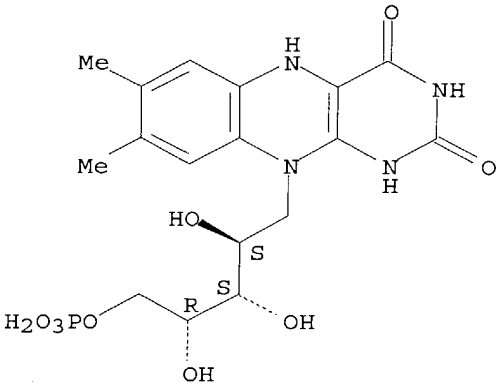


RN 1948-82-9 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 1-oxo- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 5666-16-0 HCAPLUS
CN Riboflavin 5'-(dihydrogen phosphate), 1,5-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

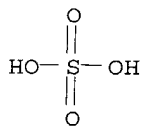
RN 7439-98-7 HCAPLUS
CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

Mo

RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

RN 10124-49-9 HCAPLUS
CN Sulfuric acid, iron salt (8CI, 9CI) (CA INDEX NAME)



●x Fe(x)

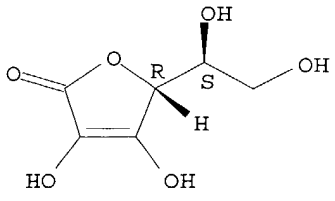
L145 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:552171 HCAPLUS
DN 137:99036
ED Entered STN: 25 Jul 2002
TI Synergistic compositions containing **ascorbate** and **lysine** for the treatment of extracellular matrix degeneration
PA **Rath, Matthias, Neth.**
SO Ger. Offen., 10 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM A61K031-375
ICS A61K031-198
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 1
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10101522	A1	20020725	DE 2001-10101522	20010115
PRAI	DE 2001-10101522		20010115		

AB The invention concerns synergistic pharmaceutical compns. that contain **ascorbate** and fibrinolysis/collagenase inhibitors from the group of **lysine** and its analogs for the prevention and treatment of extracellular matrix degeneration. The compns. further contain antioxidants. Thus typical oral compns. contain (mg/kgBw/d) and (IU/kgBw/d) resp.: **ascorbate** 5-500; EACA 1-1500; tranexamic acid 1-500; p-aminomethyl benzoic acid 1-500; **lysine** 1-1500; proline 1-1500; n-acetyl cysteine 0.1-5000; carotene 0.1-10 000; tocopherol 0.1-500.
ST synergism drug **ascorbate lysine** extracellular matrix degeneration
IT Extracellular matrix
(degeneration; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)
IT Drug delivery systems
(oral; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)
IT Drug delivery systems
(parenterals; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)
IT Fibrinolysis
(prevention of; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

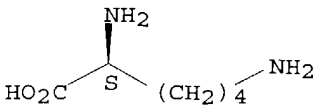
IT Cooperative phenomena
(synergism; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)
IT Atherosclerosis
Neoplasm
(synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)
IT Tocopherols
Trace elements, biological studies
Vitamins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)
IT 9001-12-1, Collagenase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)
IT **50-81-7**, **Ascorbic acid**, biological studies
56-87-1, L-**Lysine**, biological studies 56-91-7, p-Aminomethyl benzoic acid 60-32-2, EACA 147-85-3, L-Proline, biological studies 616-91-1, L-Cysteine, N-acetyl- 701-54-2, Cyclohexanecarboxylic acid, 4-(aminomethyl)- 1197-18-8, Tranexamic acid 2393-24-0, p-Benzylamine sulfonic acid 6072-02-2, L-**Lysine**, N2-acetyl-, methyl ester 7782-49-2, Selenium, biological studies 23288-49-5, Probucol 24306-54-5, 4-Aminomethyl-bicyclo-2,2,2-octane-1-carboxylic acid
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; DE 4243363 A1 HCAPLUS
(2) Anon; JP 4243825 A
(3) Anon; US 5639787 A HCAPLUS
(4) Anon; JP 62048622 A HCAPLUS
(5) Anon; JP 6256184 A
(6) Anon; JARC Sci Publ 1982, V41, P665
IT **50-81-7**, **Ascorbic acid**, biological studies
56-87-1, L-**Lysine**, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)
RN 50-81-7 HCAPLUS
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 56-87-1 HCAPLUS
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L145 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:272794 HCAPLUS
DN 136:299725
ED Entered STN: 12 Apr 2002
TI Therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer
IN **Rath, Matthias**
PA Neth.
SO Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DT **Patent**
LA English
IC ICM A61K031-195
ICS A61K031-375; A61P035-00
ICI A61K031-195, A61K031-375
CC 63-6 (**Pharmaceuticals**)
Section cross-reference(s): **1**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1195159	A1	20020410	EP 2000-121950	20001009 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PRAI EP 2000-121950 20001009 <--

AB A therapeutic **composition** for the prevention and treatment of different forms of cancer in very elevated dosages of **ascorbic acid** and salts, L-**Lysine** and L-proline, vitamins and trace elements.

ST therapeutic **combination ascorbate lysine** antitumor; arginine **ascorbate** antitumor therapeutic **combination**

IT Flavonoids
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(biflavonoids; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

IT Uterus, neoplasm
(cervix, inhibitors; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

IT Antitumor agents
(cervix; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

IT Intestine, neoplasm
(duodenum, inhibitors; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

IT Antitumor agents
(duodenum; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

IT Antitumor agents
(esophagus; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of

cancer)
IT Drug delivery systems
(inhalants; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Lung, neoplasm
Ovary, neoplasm
Skin, neoplasm
Stomach, neoplasm
Testis, neoplasm
(inhibitors; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Drug delivery systems
(injections; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Antitumor agents
(lung; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Antitumor agents
(mammary gland; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Antitumor agents
(melanoma; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Esophagus
Mammary gland
(neoplasm, inhibitors; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Antitumor agents
(ovary; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Antitumor agents
(skin; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Antitumor agents
(small intestine; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Intestine, neoplasm
(small, inhibitors; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Antitumor agents
(stomach; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Drug delivery systems
(suppositories; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Drug delivery systems
(tablets; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Antitumor agents
(testis; therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
IT Carotenes, biological studies
Trace elements, biological studies
Vitamins

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

IT **50-81-7**, **Ascorbic acid**, biological studies
56-40-6D, Glycine, chromium and **molybdenum** complexes
56-87-1, L-**Lysine**, biological studies 58-56-0,
Pyridoxine hydrochloride 58-85-5, Biotin 59-02-9, D-.α.-
Tocopherol 59-30-3, Folic acid, biological studies **59-67-6**,
Niacin, biological studies 67-03-8, **Thiamine** hydrochloride
67-97-0, Cholecalciferol 68-19-9, Cyanocobalamin **83-88-5**,
Riboflavin, biological studies 87-89-8, Inositol **98-92-0**
, **Niacinamide** 119-13-1, δ-Tocopherol 127-40-2, Lutein
137-08-6 137-66-6, **Ascorbyl** Palmitate 147-85-3,
L-Proline, biological studies 148-03-8, β-Tocopherol 303-98-0,
Coenzyme Q10 432-70-2, α-Carotene 472-70-8, Kryptoxanthin
541-15-1, L-**Carnitine** **657-27-2**, L-
Lysine hydrochloride 1119-34-2, L-Arginine hydrochloride
3211-76-5, L-Selenomethionine **5743-27-1**, Calcium
Ascorbate 7048-04-6, L-Cysteine hydrochloride monohydrate
7235-40-7, β-Carotene **7439-96-5D**, Manganese, chelates
7439-98-7D, **Molybdenum**, glycinate complexes 7440-09-7,
Potassium, biological studies 7440-47-3D, Chromium, glycinate complexes
7616-22-0, γ-Tocopherol **7693-13-2**, Calcium **citrate**
7757-93-9, Dicalcium Phosphate **7779-25-1**, Magnesium
citrate 13479-54-4, Copper glycinate 14281-83-5, Zinc
glycinate **14451-00-4**, Iron **fumarate** 14783-68-7
15431-40-0, Magnesium **Ascorbate** 35947-07-0, Calcium
glycinate 174882-69-0, Pycnogenol
RL: **PAC (Pharmacological activity)**; **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

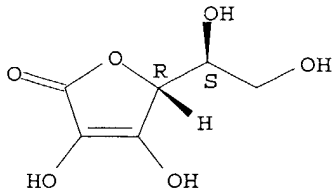
RE

(1) Bio Nutritional Health Service; GB 2268871 A 1994 HCAPLUS
(2) Bostom, A; PHARMACOTHERAPY 1995, V15(4), P458 MEDLINE
(3) Dioguardi, F; US 5198465 A 1993 HCAPLUS
(4) Dzau, V; US 5891459 A 1999 HCAPLUS
(5) Health Now Inc; EP 0891771 A 1999 HCAPLUS
(6) Katz, E; JOURNAL OF ORTHOMOLECULAR MEDICINE 1996, V11/3, P173
(7) Novo Med Ag; DE 3440090 A 1986 HCAPLUS
(8) Otsuka Pharma Co Ltd; GB 2029220 A 1980 HCAPLUS
(9) Paul, S; US 5626883 A 1997 HCAPLUS
(10) Rath, M; US 5278189 A 1994 HCAPLUS
(11) Rath, M; US 5650418 A 1997 HCAPLUS

IT **50-81-7**, **Ascorbic acid**, biological studies
56-87-1, L-**Lysine**, biological studies **59-67-6**,
Niacin, biological studies **83-88-5**, **Riboflavin**,
biological studies **98-92-0**, **Niacinamide**
137-08-6 **541-15-1**, L-**Carnitine**
657-27-2, L-**Lysine** hydrochloride **5743-27-1**,
Calcium **Ascorbate** **7439-96-5D**, Manganese, chelates
7439-98-7D, **Molybdenum**, glycinate complexes
7693-13-2, Calcium **citrate** **7779-25-1**,
Magnesium **citrate** **14451-00-4**, Iron **fumarate**
15431-40-0, Magnesium **Ascorbate**
RL: **PAC (Pharmacological activity)**; **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(therapeutic **combination** of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

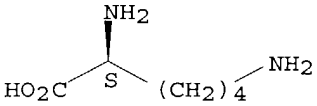
RN 50-81-7 HCAPLUS
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

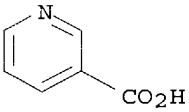


RN 56-87-1 HCAPLUS
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.

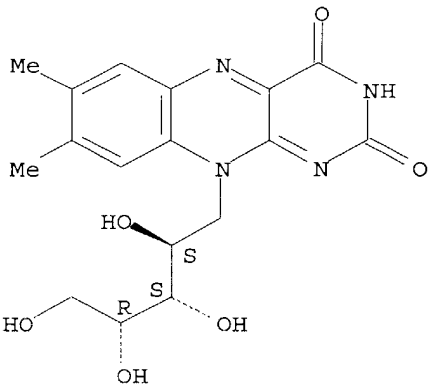


RN 59-67-6 HCAPLUS
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)

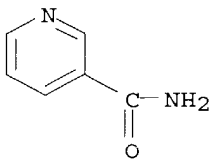


RN 83-88-5 HCAPLUS
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

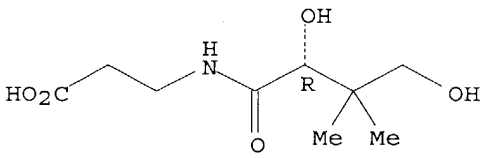


RN 98-92-0 HCAPLUS
CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 137-08-6 HCAPLUS
CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]-, calcium salt (2:1) (9CI) (CA INDEX NAME)

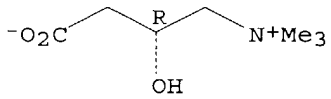
Absolute stereochemistry. Rotation (+).



●1/2 Ca

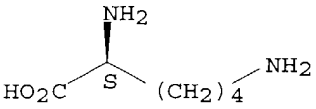
RN 541-15-1 HCAPLUS
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 657-27-2 HCAPLUS
CN L-Lysine, monohydrochloride (9CI) (CA INDEX NAME)

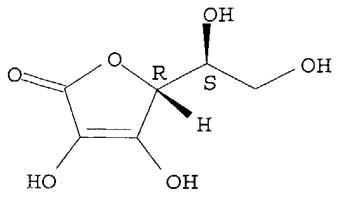
Absolute stereochemistry.



● HCl

RN 5743-27-1 HCAPLUS
CN L-Ascorbic acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●1/2 Ca

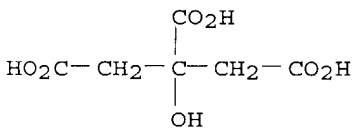
RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7439-98-7 HCAPLUS
CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

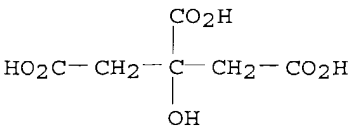
Mo

RN 7693-13-2 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, calcium salt (9CI) (CA INDEX NAME)



●x Ca

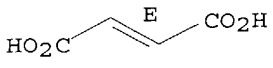
RN 7779-25-1 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (9CI) (CA INDEX NAME)



●x Mg

RN 14451-00-4 HCAPLUS
CN 2-Butenedioic acid (2E)-, iron salt (9CI) (CA INDEX NAME)

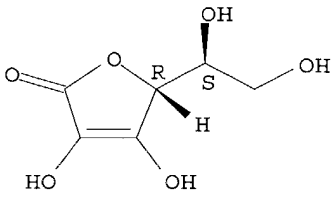
Double bond geometry as shown.



●x Fe(x)

RN 15431-40-0 HCAPLUS
CN L-Ascorbic acid, magnesium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●1/2 Mg

L145 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:918845 HCAPLUS
DN 136:42851
ED Entered STN: 21 Dec 2001
TI **Composition** for the prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium
IN **Rath, Matthias**
PA Neth.
SO Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DT **Patent**
LA English
IC ICM A61K031-195
ICS A61K031-375; A61K033-14; A61P009-00; A61P011-00; A61P027-00
ICI A61K031-195, A61K031-375
CC 63-6 (**Pharmaceuticals**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1163904	A1	20011219	EP 2000-112811	20000616 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	BR 2001003256	A	20020312	BR 2001-3256	20010613 <--
	NO 2001003004	A	20011217	NO 2001-3004	20010615 <--
	ZA 2001004931	A	20011220	ZA 2001-4931	20010615 <--
	CN 1333020	A	20020130	CN 2001-124330	20010615 <--
	JP 2002047183	A2	20020212	JP 2001-181658	20010615 <--
	NZ 512402	A	20030228	NZ 2001-512402	20010615 <--
PRAI	EP 2000-112811	A	20000616 <--		

AB The invention relates to the use of biochem. substances for a **composition** for the prevention and treatment of health conditions

caused by constriction of smooth muscle cells in organs of the human body like high blood pressure, asthma, glaucoma and tinnitus.

ST smooth muscle disease **compn**; **ascorbate** smooth muscle disease **compn**; arginine smooth muscle disease **compn**; magnesium compd smooth muscle disease **compn**

IT Flavonoids
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(bioflavonoids; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Amino acids, biological studies
Carotenes, biological studies
Trace elements, biological studies
Vitamins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
(infusions; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
(inhalants; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
(injections; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Muscle, disease
(smooth; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
(suppositories; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT Drug delivery systems
(tablets; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

IT **50-81-7**, **Ascorbic acid**, biological studies
52-90-4, L-Cysteine, biological studies 56-40-6D, Glycine, complex with transition metals **56-87-1**, L-**Lysine**, biological studies 58-85-5, Biotin 59-02-9, α-Tocopherol 59-30-3, Folic acid, biological studies **59-43-8**, **Thiamine**, biological studies **59-67-6**, Niacin, biological studies 65-23-6, Pyridoxine 67-97-0, Cholecalciferol 68-19-9, Cyanocobalamine 74-79-3, L-Arginine, biological studies **83-88-5**, **Riboflavin**, biological studies 87-89-8, Inositol **98-92-0**, **Niacinamide** 119-13-1, δ-Tocopherol **137-08-6**, Calcium **pantothenate** 137-66-6, **Ascorbyl** palmitate 147-85-3, L-Proline, biological studies 148-03-8, β-Tocopherol 303-98-0, Coenzyme q10 **541-15-1**, L-**Carnitine** 3211-76-5, L-Selenomethionine **5743-27-1**, Calcium **ascorbate** 7235-40-7, β-Carotene **7439-96-5D**, Manganese, chelates **7439-98-7D**, **Molybdenum**, complex with glycine 7440-09-7D, Potassium, chelates 7440-47-3D, Chromium, complex with glycine 7616-22-0, γ-Tocopherol **7693-13-2**, Calcium **citrate** 7757-93-9, Dicalcium phosphate **7779-25-1**, Magnesium **citrate** 13479-54-4, Copper glycinate 14281-83-5, Zinc glycinate 14783-68-7 **15431-40-0**, Magnesium **ascorbate** 35947-07-0, Calcium glycinate 174882-69-0, Pycnogenol
RL: **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

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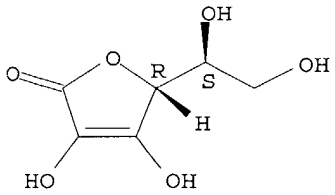
IT **50-81-7**, **Ascorbic acid**, biological studies **56-87-1**, L-**Lysine**, biological studies **59-43-8**, **Thiamine**, biological studies **59-67-6**, Niacin, biological studies **83-88-5**, **Riboflavin**, biological studies **98-92-0**, **Niacinamide 137-08-6**, Calcium **pantothenate 541-15-1**, L-**Carnitine 5743-27-1**, Calcium **ascorbate 7439-96-5D**, Manganese, chelates **7439-98-7D**, **Molybdenum**, complex with glycine **7693-13-2**, Calcium **citrate 7779-25-1**, Magnesium **citrate 15431-40-0**, Magnesium **ascorbate**
RL: **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

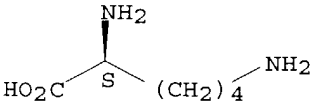
RN 50-81-7 HCAPLUS
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

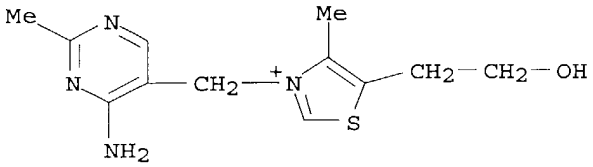


RN 56-87-1 HCAPLUS
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.

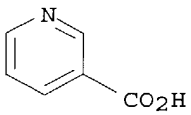


RN 59-43-8 HCAPLUS
CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methyl- chloride (9CI) (CA INDEX NAME)



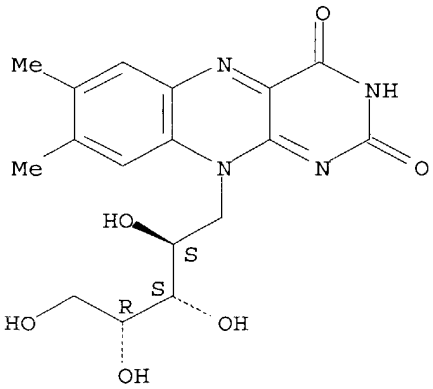
● Cl^-

RN 59-67-6 HCAPLUS
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)

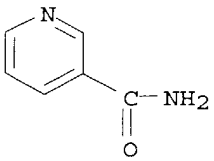


RN 83-88-5 HCAPLUS
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

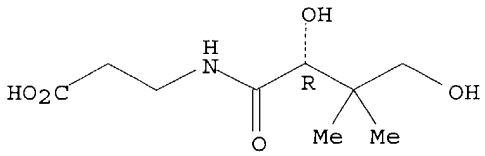


RN 98-92-0 HCAPLUS
CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 137-08-6 HCAPLUS
CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]-, calcium salt (2:1) (9CI) (CA INDEX NAME)

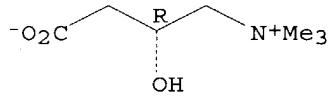
Absolute stereochemistry. Rotation (+).



●1/2 Ca

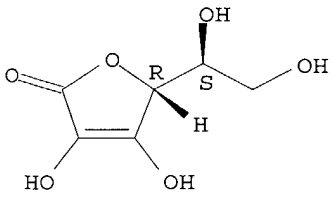
RN 541-15-1 HCAPLUS
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 5743-27-1 HCAPLUS
CN L-Ascorbic acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●1/2 Ca

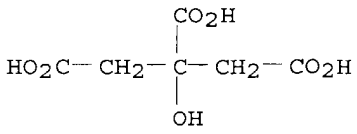
RN 7439-96-5 HCAPLUS
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7439-98-7 HCAPLUS
CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

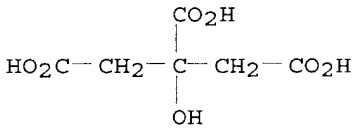
Mo

RN 7693-13-2 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, calcium salt (9CI) (CA INDEX NAME)



●x Ca

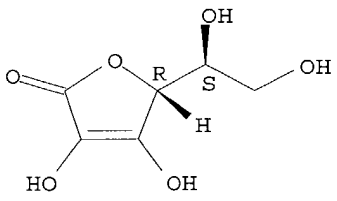
RN 7779-25-1 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (9CI) (CA INDEX NAME)



●x Mg

RN 15431-40-0 HCAPLUS
CN L-Ascorbic acid, magnesium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●1/2 Mg

L145 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **1999:429714** HCAPLUS
DN **131:266358**
ED Entered STN: 13 Jul 1999
TI **Pyruvate** and **hydroxycitrate/carnitine** may **synergize** to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids
AU McCarty, M. F.; Gustin, J. C.
CS NutriGuard Research, Encinitas, CA, 92024, USA
SO Medical Hypotheses (**1999**), 52(5), 407-416
CODEN: MEHYDY; ISSN: 0306-9877
PB Churchill Livingstone
DT Journal; General Review
LA English
CC 1-0 (**Pharmacology**)

Section cross-reference(s): 18

AB A review with 97 refs. containing an informal pilot trial with new data. In a recent pilot study, joint administration of **pyruvate**, **hydroxycitrate** (HCA), and **carnitine** to obese subjects was associated with a remarkable rate of body-fat loss and thermogenesis, strongly suggestive of uncoupled fatty-acid oxidation Hepatocytes possess an uncoupling mechanism - reverse electron transport - that enables fasting ketogenesis to proceed independent of respiratory control. Electrons entering the respiratory chain at the coenzyme Q (CoQ) level via **FAD**-dependent acyl coA dehydrogenase, can be driven "up" the chain by the electrochem. proton gradient to reduce NAD+; if these electrons are then shuttled to the cytoplasm, returning to the respiratory chain at the CoQ level, the net result is heat generation at the expense of the proton gradient, enabling the uncoupled flow of electrons to oxygen. **Pyruvate**'s bariatric utility may stem from its ability to catalyze the rapid transport of high-energy electrons from mitochondria to the cytoplasm, thus stimulating electron shuttle mechanisms. By enabling rapid mitochondrial uptake of fatty acids and thus disinhibiting hepatocyte ketogenesis, HCA/**carnitine** should initiate reverse electron transport: concurrent amplification of electron shuttle mechanisms by **pyruvate** can be expected to accelerate this reverse electron transport, thereby decreasing the electrochem. proton gradient. As a result, hepatocytes may be able to convert fatty acids to CO2 and heat with little net generation of ATP. These considerations suggest that it may be feasible to render hepatocytes functionally equivalent to activated brown fat, such that stored fat can be selectively oxidized in the absence of caloric restriction. Other measures which enhance the efficiency of hepatocyte electron shuttle mechanisms may increase the efficacy of this strategy.

ST review **pyruvate hydroxycitrate carnitine** lipolysis

IT Lipids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(lipolysis; **pyruvate** and **hydroxycitrate**/**carnitine** may **synergize** to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT **Respiration, animal**
(mitochondrial; **pyruvate** and **hydroxycitrate**/**carnitine** may **synergize** to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT Fatty acids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(oxidation; **pyruvate** and **hydroxycitrate**/**carnitine** may **synergize** to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT Antiobesity agents
(**pyruvate** and **hydroxycitrate/carnitine** may **synergize** to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT Drug interactions
(**synergistic**; **pyruvate** and **hydroxycitrate**/**carnitine** may **synergize** to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT Diet
(therapeutic; **pyruvate** and **hydroxycitrate**/**carnitine** may **synergize** to promote reverse electron

transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT **127-17-3**, biological studies **541-15-1**, **Carnitine**
27750-10-3, **Hydroxycitric** acid
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**pyruvate** and **hydroxycitrate/carnitine** may **synergize** to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

RE.CNT 97 THERE ARE 97 CITED REFERENCES AVAILABLE FOR THIS RECORD

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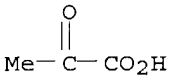
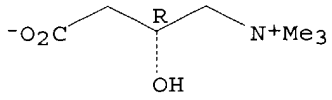
IT **127-17-3**, biological studies **541-15-1, Carnitine**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(**pyruvate** and **hydroxycitrate/carnitine** may **synergize** to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

RN 127-17-3 HCAPLUS
CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L145 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **1999:297312** HCAPLUS
DN **130:320858**
ED Entered STN: 14 May 1999
TI Nutritional supplement for cerebral metabolic insufficiencies
IN Blass, John P.
PA Cornell Research Foundation, Inc., USA
SO PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-70
ICS A61K031-715; A61K031-19
CC 1-11 (**Pharmacology**)
Section cross-reference(s): **63**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9921565	A1	19990506	WO 1998-US18120	19980901 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2306875	AA	19990506	CA 1998-2306875	19980901 <--
	AU 9892139	A1	19990517	AU 1998-92139	19980901 <--
	AU 760140	B2	20030508		
	EP 1032403	A1	20000906	EP 1998-944644	19980901 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2001521002	T2	20011106	JP 2000-517723	19980901 <--
	US 6537969	B1	20030325	US 2000-529091	20001020 <--
	US 2003176365	A1	20030918	US 2003-379816	20030304 <--
PRAI	US 1997-63165P	P	19971024 <--		
	WO 1998-US18120	W	19980901 <--		
	US 2000-529091	A1	20001020 <--		

AB The present invention relates to a pharmaceutical **composition** which includes a sugar and a **Krebs cycle** intermediate, or salt thereof, or a precursor of a **Krebs cycle** intermediate. **Krebs cycle** intermediates include **citric acid**, **aconitic** acid, **isocitric**

acid, α- **ketoglutaric, succinic**
acid, fumaric acid, malic acid, and
oxaloacetic acid, and **mixts.** thereof. Precursors of
Krebs cycle intermediates are compds. converted by the
body to form a **Krebs cycle** intermediate. The present
invention also relates to administration of the pharmaceutical
composition to treat an individual for a disorder involving impaired
mitochondrial function and to improve cerebral function in an individual
having impaired cerebral metabolism

ST nutritional supplement saccharide **Krebs cycle**
intermediate; cerebral metabolic insufficiency glucose **malate**

IT Nervous system
(Huntington's chorea; nutritional supplements containing sugars and
Krebs cycle intermediates for improving impaired
mitochondrial functions)

IT Glutamate antagonists
(NMDA antagonists; nutritional supplements containing sugars and
Krebs cycle intermediates for improving impaired
mitochondrial functions)

IT Antioxidants
(as adjuvant; nutritional supplements containing sugars and **Krebs**
cycle intermediates for improving impaired mitochondrial
functions)

IT Minerals, biological studies
Vitamins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
(Uses)
(as adjuvant; nutritional supplements containing sugars and **Krebs**
cycle intermediates for improving impaired mitochondrial
functions)

IT Heart, disease
(cardiomyopathy; nutritional supplements containing sugars and
Krebs cycle intermediates for improving impaired
mitochondrial functions)

IT Mental disorder
(depression, neurotic; nutritional supplements containing sugars and
Krebs cycle intermediates for improving impaired
mitochondrial functions)

IT Mental disorder
(depression; nutritional supplements containing sugars and **Krebs**
cycle intermediates for improving impaired mitochondrial
functions)

IT Cardiovascular system
(disease; nutritional supplements containing sugars and **Krebs**
cycle intermediates for improving impaired mitochondrial
functions)

IT Heart, disease
(failure; nutritional supplements containing sugars and **Krebs**
cycle intermediates for improving impaired mitochondrial
functions)

IT Mitochondria
(function enhancement in; nutritional supplements containing sugars and
Krebs cycle intermediates for improving impaired
mitochondrial functions)

IT Drug delivery systems
(injections, i.m.; nutritional supplements containing sugars and
Krebs cycle intermediates for improving impaired
mitochondrial functions)

IT Drug delivery systems
(injections, i.v.; nutritional supplements containing sugars and
Krebs cycle intermediates for improving impaired
mitochondrial functions)

IT Drug delivery systems
(injections, s.c.; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Brain, disease
(insufficiency; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Drug delivery systems
(mucosal; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Drug delivery systems
(nasal; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Alzheimer's disease
Atherosclerosis
Musculoskeletal diseases
Nutrients
Parkinson's disease
Tricarboxylic acid cycle
(nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Disaccharides
Monosaccharides
Polysaccharides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Drug delivery systems
(oral; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Drug delivery systems
(parenterals; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Mental disorder
(psychosis; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Drug delivery systems
(solns., i.p.; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Nervous system
(spinocerebellar ataxia; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT Heart, disease
Heart, disease
(valve; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
IT **77-92-9D**, **Citric acid**, esters
110-15-6D, **Succinic acid**, esters
110-17-8D, **Fumaric acid**, esters
320-77-4D, **Isocitric acid**, esters

328-42-7D, **Oxaloacetic** acid, esters **328-50-7D**,
α -**Ketoglutaric acid**, esters 499-12-7D,
Aconitic acid, esters 6915-15-7D, **Malic** acid, esters
RL: **BAC (Biological activity or effector, except adverse)**; BSU
(Biological study, unclassified); **THU (Therapeutic use)**; BIOL
(Biological study); USES (Uses)
(**Krebs cycle** intermediate precursor; nutritional
supplements containing sugars and **Krebs cycle**
intermediates for improving impaired mitochondrial functions)

IT 57-00-1, Creatine **59-43-8**, **Thiamine**, biological
studies **59-67-6**, Niacin, biological studies 65-23-6,
Pyridoxine **79-83-4**, **Pantothenic acid**
83-88-5, **Riboflavin**, biological studies **541-15-1**
, L-**Carnitine**
RL: **BAC (Biological activity or effector, except adverse)**; BSU
(Biological study, unclassified); **THU (Therapeutic use)**; BIOL
(Biological study); USES (Uses)
(as adjuvant; nutritional supplements containing sugars and **Krebs**
cycle intermediates for improving impaired mitochondrial
functions)

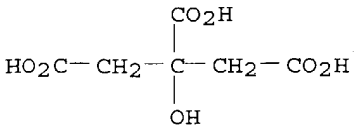
IT 9000-81-1, Acetylcholinesterase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; nutritional supplements containing sugars and **Krebs**
cycle intermediates for improving impaired mitochondrial
functions)

IT 50-99-7, Glucose, biological studies 56-84-8, L-Aspartic acid,
biological studies 57-48-7, Fructose, biological studies 57-50-1,
Sucrose, biological studies 59-23-4, Galactose, biological studies
63-42-3, Lactose 69-79-4, Maltose **77-92-9**, **Citric**
acid, biological studies **110-15-6**, **Succinic**
acid, biological studies **110-17-8**, **Fumaric**
acid, biological studies 140-86-3 **320-77-4**,
Isocitric acid 328-42-7, **Oxaloacetic**
acid **328-50-7**, α -**Ketoglutaric**
acid 499-12-7, **Aconitic** acid 1518-62-3,
2,4-Dihydroxybutyric acid 3068-00-6, 1,2,4-Butanetriol 3458-28-4,
Mannose 6915-15-7, **Malic** acid 9005-25-8, Starch, biological
studies 22136-38-5, 2-keto-4-Hydroxybutyric acid
RL: **BAC (Biological activity or effector, except adverse)**; BSU
(Biological study, unclassified); **THU (Therapeutic use)**; BIOL
(Biological study); USES (Uses)
(nutritional supplements containing sugars and **Krebs**
cycle intermediates for improving impaired mitochondrial
functions)

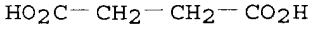
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Umezawa; US 3963579 A 1976 HCAPLUS
(2) Yokota, K; Nippon Iyo Masu Supekutoru Gakkai Koenshu 1992, V17, P55 HCAPLUS

IT **77-92-9D**, **Citric acid**, esters
110-15-6D, **Succinic acid**, esters
110-17-8D, **Fumaric acid**, esters
320-77-4D, **Isocitric acid**, esters
328-42-7D, **Oxaloacetic** acid, esters **328-50-7D**,
α -**Ketoglutaric acid**, esters
RL: **BAC (Biological activity or effector, except adverse)**; BSU
(Biological study, unclassified); **THU (Therapeutic use)**; BIOL
(Biological study); USES (Uses)
(**Krebs cycle** intermediate precursor; nutritional
supplements containing sugars and **Krebs cycle**
intermediates for improving impaired mitochondrial functions)

RN 77-92-9 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (9CI) (CA INDEX NAME)

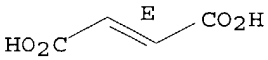


RN 110-15-6 HCAPLUS
CN Butanedioic acid (9CI) (CA INDEX NAME)

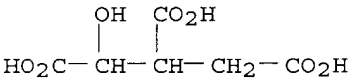


RN 110-17-8 HCAPLUS
CN 2-Butenedioic acid (2E)- (9CI) (CA INDEX NAME)

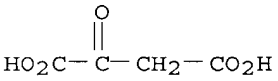
Double bond geometry as shown.



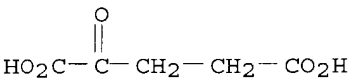
RN 320-77-4 HCAPLUS
CN Pentaric acid, 3-carboxy-2,3-dideoxy- (9CI) (CA INDEX NAME)



RN 328-42-7 HCAPLUS
CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)

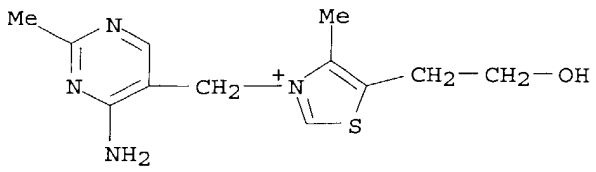


RN 328-50-7 HCAPLUS
CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)

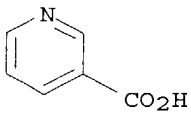


IT **59-43-8**, **Thiamine**, biological studies **59-67-6**, Niacin, biological studies **79-83-4**, **Pantothenic acid 83-88-5**, **Riboflavin**, biological studies **541-15-1**, L-**Carnitine**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(as adjuvant; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
RN 59-43-8 HCAPLUS
CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-

4-methyl- chloride (9CI) (CA INDEX NAME)

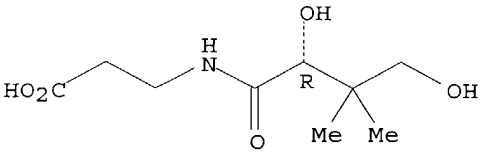


RN 59-67-6 HCAPLUS
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)



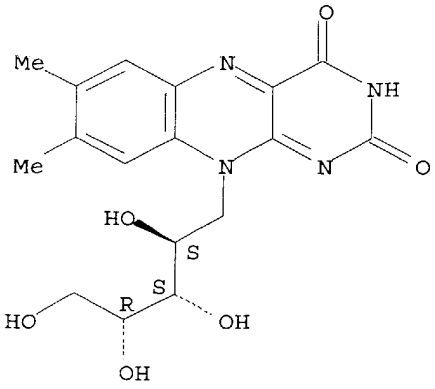
RN 79-83-4 HCAPLUS
CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



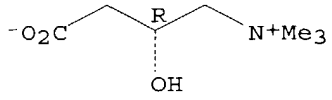
RN 83-88-5 HCAPLUS
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

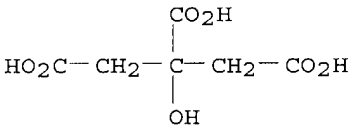


RN 541-15-1 HCAPLUS
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-(9CI) (CA INDEX NAME)

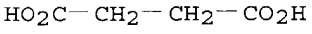
Absolute stereochemistry. Rotation (-).



IT **77-92-9**, **Citric acid**, biological studies
110-15-6, **Succinic acid**, biological studies
110-17-8, **Fumaric acid**, biological studies
320-77-4, **Isocitric acid** **328-42-7**,
Oxaloacetic acid **328-50-7**, α -
Ketoglutaric acid
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
RN 77-92-9 HCAPLUS
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (9CI) (CA INDEX NAME)

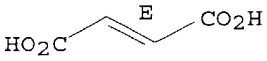


RN 110-15-6 HCAPLUS
CN Butanedioic acid (9CI) (CA INDEX NAME)

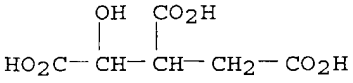


RN 110-17-8 HCAPLUS
CN 2-Butenedioic acid (2E)- (9CI) (CA INDEX NAME)

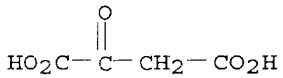
Double bond geometry as shown.



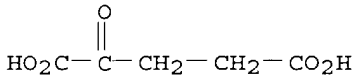
RN 320-77-4 HCAPLUS
CN Pentaric acid, 3-carboxy-2,3-dideoxy- (9CI) (CA INDEX NAME)



RN 328-42-7 HCAPLUS
CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)



RN 328-50-7 HCAPLUS
CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



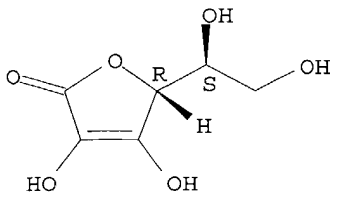
L145 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:70355 HCAPLUS
DN 130:129986
ED Entered STN: 02 Feb 1999
TI Compositions comprising **lysine** and **ascorbate** compounds for the treatment and prevention of cardiovascular diseases
IN **Rath, Matthias**
PA Health Now, Inc., USA
SO Eur. Pat. Appl., 14 pp.
CODEN: EPXXDW
DT **Patent**
LA English
IC ICM A61K031-195
ICS A61K031-375
ICI A61K031-195, A61K031-375, A61K031-40, A61K031-59
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 1, 2
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 891771	A1	19990120	EP 1997-304994	19970708
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	EP 1068868	A2	20010117	EP 2000-115643	19970708
	EP 1068868	A3	20010131		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	NZ 509295	A	20021220	NZ 2001-509295	20010110
	HR 2001000023	A1	20020831	HR 2001-23	20010111
	HR 20010023	B1	20031231		
PRAI	EP 1997-304994	A	19970708		

AB A therapeutic **lysine**-based composition and methods for its use in the prevention and treatment of cardiovascular disease is disclosed. The composition includes at least one **lysine** compound such as **lysine**, **lysine** hydrochloride, **lysine** dihydrochloride, **lysine** orotate, **lysine** **succinate**, or **lysine** glutamate. The composition may also preferentially include **ascorbate**, proline and vitamin D or compds. thereof. The composition may also include N-acetyglucosamine and other compds. restoring and maintaining optimum biol. function of the vascular wall. A patient at risk of developing or with a pre-existing cardiovascular disease is treated by administering orally or parenterally a desired dosage of the composition on a daily basis.
ST **lysine** antiatherosclerotic **ascorbate** cardiovascular disease
IT Lipoproteins
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU

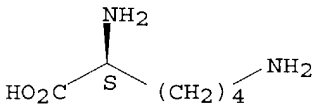
(Occurrence)
(Lp(a); **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)
IT Antiarteriosclerotics
(antiatherosclerotics; **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)
IT Drug delivery systems
(carriers; **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)
IT Cardiovascular system
(disease; **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)
IT **50-81-7**, **Ascorbic acid**, biological studies
56-87-1, **Lysine**, biological studies 60-32-2, ε-Aminocaproic acid 67-97-0, Cholecalciferol 147-85-3, Proline, biological studies **657-26-1**, **Lysine** dihydrochloride **657-27-2**, **Lysine** hydrochloride 1197-18-8, Tranexamic acid 1406-16-2, Vitamin d 5408-52-6, **Lysine** glutamate 7512-17-6, N-Acetylglucosamine 7776-34-3, Proline hydrochloride 12001-76-2, Vitamin B 18841-57-1, **Lysine** orotate 29324-94-5 32511-63-0, 1,25-Dihydroxyvitamin d3 219942-03-7 219942-06-0 219942-08-2
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(**lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Eisai Kk; JP 60087221 A 1985 HCAPLUS
(2) Rath, M; US 5278189 A HCAPLUS
(3) Rath, M; US 5650418 A HCAPLUS
(4) Rath, M; WO 9119488 A HCAPLUS
(5) Rath, M; Journal of Applied Nutrition 1996, V48/3(68-78)
IT **50-81-7**, **Ascorbic acid**, biological studies
56-87-1, **Lysine**, biological studies **657-26-1**, **Lysine** dihydrochloride **657-27-2**, **Lysine** hydrochloride
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(**lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)
RN 50-81-7 HCAPLUS
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



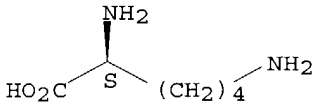
RN 56-87-1 HCAPLUS
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



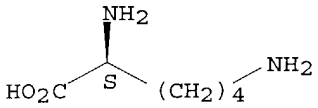
RN 657-26-1 HCAPLUS
CN L-Lysine, dihydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 657-27-2 HCAPLUS
CN L-Lysine, monohydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L145 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **1997:576691** HCAPLUS
DN **127:243272**
ED Entered STN: 10 Sep 1997
TI Method and **composition** using purines and other compounds for inhibiting cellular irreversible changes due to stress
IN Miller, Guy; Lou, Lillian; Nakamura, John
PA Galileo Laboratories, Inc., USA
SO PCT Int. Appl., 31 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-70
ICS C07H019-16; C07H019-20
CC 1-12 (**Pharmacology**)
Section cross-reference(s): **63**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9730713	A1	19970828	WO 1997-US2945	19970220 <--

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,

IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG
US 5801159 A 19980901 US 1996-607022 19960223 <--
CA 2247461 AA 19970828 CA 1997-2247461 19970220 <--
AU 9719749 A1 19970910 AU 1997-19749 19970220 <--
EP 935466 A1 19990818 EP 1997-907855 19970220 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
JP 2000506834 T2 20000606 JP 1997-530408 19970220 <--
NO 9803823 A 19981001 NO 1998-3823 19980820 <--
PRAI US 1996-607022 19960223 <--
WO 1997-US2945 19970220 <--
OS MARPAT 127:243272

AB **Formulations** of naturally occurring physiol. acceptable compds. and their derivs. are provided for treatment of cellular stress, particularly hypoxia. By administering the **formulations**, comprising for the most part purines, sugars, amino acids and physiol. acceptable derivs. thereof, by themselves or in **combination** with each other and with other compds., particularly electron acceptor compds., the time to irreversible cellular changes, particularly mortality, can be greatly extended.

ST purine sugar cytoprotectant cell stress; amino acid cytoprotectant cell stress; electron acceptor cytoprotectant cell stress

IT Diet
(and dietary supplement; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Food
(and food bars; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Carboxylic acids, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydroxy; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Stress, animal
(hypoxic; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Carboxylic acids, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(oxo; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Animal tissue
Animal tissue culture
Beverages
Cytoprotective agents
Drug delivery systems
Electron acceptors
Glycolysis
Hypoxia, animal
Organ, animal
Stress, animal
Transplant and Transplantation
(purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Amino acids, biological studies
Dipeptides
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(purines and other compds. for inhibition of cellular irreversible

changes due to stress)

IT Carbohydrates, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(reducing sugars; purines and other compds. for inhibition of cellular irreversible changes due to stress)

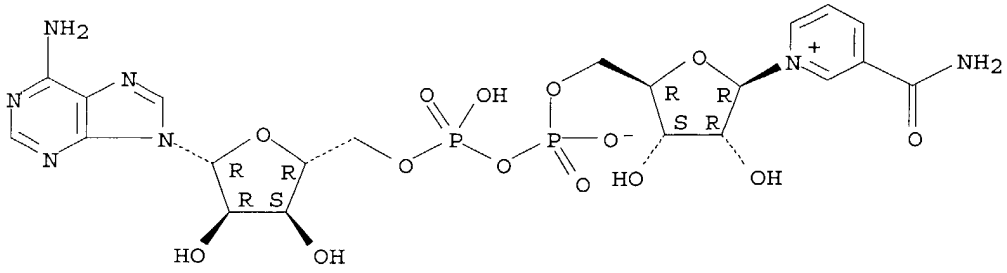
IT 50-44-2, 6-Mercaptopurine 50-89-5, Thymidine, biological studies 50-99-7, D-Glucose, biological studies **53-84-9**, NAD 56-40-6, Glycine, biological studies 56-41-7, Alanine, biological studies 56-45-1, Serine, biological studies **56-65-5**, **Adenosine triphosphate**, biological studies 56-85-9, Glutamine, biological studies 56-86-0, L-Glutamic acid, biological studies **56-87-1**, L-**Lysine**, biological studies 57-48-7, Fructose, biological studies 58-55-9, Theophylline, biological studies 58-61-7, Adenosine, biological studies 58-63-9, Inosine **58-64-0**, **Adenosine diphosphate**, biological studies 59-23-4, Galactose, biological studies 61-19-8, 5'-Adenylic acid, biological studies 61-73-4, Methylene blue 63-91-2, L-Phenylalanine, biological studies 65-86-1, Orotic acid 68-41-7, Cycloserine 71-30-7, Cytosine 73-03-0, Cordycepin 73-22-3, Tryptophan, biological studies 74-79-3, Arginine, biological studies 84-21-9, 3'-Adenosine monophosphate 85-31-4, 6-Mercaptoguanosine 107-35-7, Taurine 107-97-1, Sarcosine 118-00-3, Guanosine, biological studies 120-73-0D, Purine, derivs. **127-17-3**, **Pyruvic acid**, biological studies 131-99-7, 5'-Inosinic acid 146-80-5, Xanthosine 300-85-6 **328-50-7**, α -**Ketoglutaric acid** 488-69-7, Fructose-1,6-diphosphate 541-50-4, Acetoacetic acid, biological studies 551-84-8, Xylulose 574-25-4, 6-Mercaptopurine riboside 598-41-4, Glycine amide 600-18-0, α-Ketobutyric acid 616-34-2, Glycine methyl ester 643-13-0, Fructose-6-phosphate 653-63-4, 2'-Deoxyadenosine monophosphate 820-11-1, 3-Phosphoglyceric acid 890-38-0, Deoxyinosine 892-48-8, 5'-Chloro-5'-deoxyadenosine 902-04-5 958-09-8, Deoxyadenosine 961-07-9, Deoxyguanosine 1053-73-2, 3',5'-**Adenosine diphosphate** 1113-60-6, β- **Hydroxypyruvic** acid 1118-68-9, N,N-Dimethylglycine 2002-28-0, Ribulose-1,5-diphosphate 2004-07-1, 2-Amino-6-chloropurine riboside 2140-73-0, 1-Methylinosine 2140-77-4 2140-79-6, 2'-O-Methyladenosine 2239-64-7 2304-12-3, Adenosine 5'-monosulfate 2457-80-9, 5'-Deoxy-5'-methylthioadenosine 3393-18-8 3458-28-4, Mannose 3805-37-6, 2',5'-**Adenosine diphosphate** 4431-00-9, Aurintricarboxylic acid 4546-70-7 4754-39-6, 5'-Deoxyadenosine 5399-87-1, 6-Chloropurine riboside 5556-48-9, Ribulose 5682-25-7, α-Adenosine 6915-15-7, **Malic** acid 10065-72-2, Alanine methyl ester 10139-18-1, Glucose-1,6-diphosphate 14365-44-7, 5'-Amino-5'-deoxyadenosine 20245-33-4, 7-Methylinosine 20762-30-5, Adenosine 5'-diphosphoribose 24280-93-1, Mycophenolic acid 24386-93-4, 5-Iodotubercidin 27025-41-8, Oxidized glutathione 29884-64-8, Threose 29886-19-9, 2', 3'-Di-O-acetyladenosine 32266-35-6, Dibutyryl cyclic GMP 35899-54-8 38048-32-7, S-4-Nitrobenzyl-6-thioinosine 41552-82-3, N6-Cyclopentyladenosine 51350-19-7, erythro-9-(2-Hydroxy-3-nonyl)adenine 53296-10-9, 2-Phenylaminoadenosine 56964-73-9 79082-92-1, Fructose-2,6-diphosphate 102029-71-0, Adenosine 5'-**succinate** 195503-37-8
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT **53-84-9**, NAD **56-65-5**, **Adenosine triphosphate**, biological studies **56-87-1**, L-**Lysine**, biological studies **58-64-0**, **Adenosine diphosphate**, biological studies **127-17-3**,

Pyruvic acid, biological studies **328-50-7**,
α **-Ketoglutaric acid**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(purines and other compds. for inhibition of cellular irreversible changes due to stress)

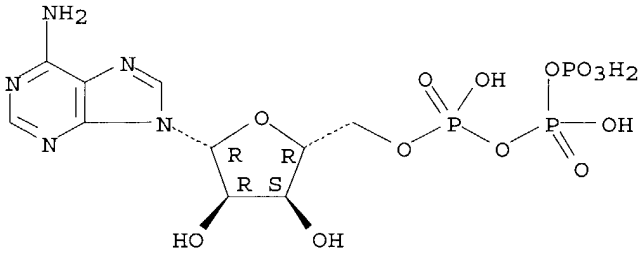
RN 53-84-9 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with 3-(aminocarbonyl)-1-β-D-ribofuranosylpyridinium, inner salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.



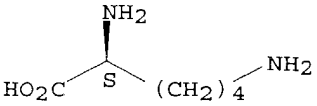
RN 56-65-5 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



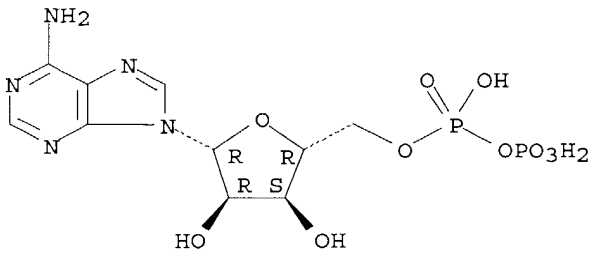
RN 56-87-1 HCAPLUS
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.

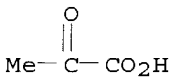


RN 58-64-0 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

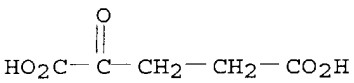
Absolute stereochemistry.



RN 127-17-3 HCAPLUS
CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 328-50-7 HCAPLUS
CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



L145 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **1997:132781** HCAPLUS
DN **126:139892**
ED Entered STN: 28 Feb 1997
TI Processes, compounds, and **compositions** for augmented ATP production, and therapeutic and other uses
IN Fahy, Gregory M.
PA Organ, Inc., USA; Life Resuscitation Technologies, Inc.
SO PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K031-70
ICS A61K031-115
CC 1-10 (**Pharmacology**)
Section cross-reference(s): 9, 13, 18, **63**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9640167	A1	19961219	WO 1996-US10255	19960607 <--
	W: AU, CA, CN, JP, KR, SG				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5707971	A	19980113	US 1995-476035	19950607 <--
	CA 2223327	AA	19961219	CA 1996-2223327	19960607 <--
	AU 9661754	A1	19961230	AU 1996-61754	19960607 <--
	EP 831853	A1	19980401	EP 1996-919403	19960607 <--
	R: BE, CH, DE, ES, FR, GB, IT, LI, NL, SE, IE				
PRAI	US 1995-476035		19950607 <--		
	WO 1996-US10255		19960607 <--		

AB Delivery of fuel and cofactors augments ATP production in cells, and mitigates damages in ischemic or metabolically impaired tissues. The processes may

be particularly effective in acute or chronic ischemic conditions, for reversing anesthesia, for treating diabetes, for producing or preventing coma due to lack of fuel of ATP, for reversing processes of aging, as dietary supplements, as performance enhancers (e.g. for sports), for tissue transplantation and other surgery, and for cold storage or cryopreservation of tissues such as organs. Compds. disclosed include NAD+, CoA, **acetyl CoA**, glyceraldehyde-3-phosphate, etc.

ST ATP augmentation ischemia diabetes anesthesia reversal; diet supplement pharmaceutical ATP augmentation; aging athletic performance enhancer ATP augmentation; transplantation surgery cryopreservation ATP augmentation; oxidative metab impairment ATP augmentation; NAD CoA **acetyl CoA** ATP augmentation; glyceraldehyde phosphate ATP augmentation

IT Antidiabetic agents
Blood products
Cytoprotective agents
Drug delivery systems
Exercise
Hypothermia
Hypoxia, animal
Ischemia
Surgery
Transplant and Transplantation
(ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Exercise
(athletic performance; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Drug delivery systems
(controlled-release; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Organ preservation
(cryopreservation; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Hypoglycemia
(death associated with; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Coma
(diabetic; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Death
(hypoglycemia-associated; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Drug delivery systems
(oral; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT **Metabolism**
(oxidative, tissue with impaired; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Aging, animal
(reversal of processes of; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Anesthesia
(reversal; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Kidney
(slices, cold storage; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT Diet
(supplements; ATP augmentation processes, compds., and **compns**., and therapeutic and other uses)

IT **53-84-9**, NAD **72-89-9**, **Acetyl CoA**
79-43-6, Dichloroacetic acid, biological studies 85-61-0, CoA,

biological studies **127-17-3**, biological studies 138-08-9, Phosphoenol **pyruvic acid** 138-81-8, 2,3-Diphosphoglyceric acid 488-69-7, Fructose-1,6-bisphosphate **541-15-1**, **Carnitine** 591-59-3, Glyceraldehyde-3-phosphate 820-11-1, 3-Phosphoglyceric acid 14992-62-2, Acetyl **carnitine**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); BUU (Biological use, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT **56-65-5**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

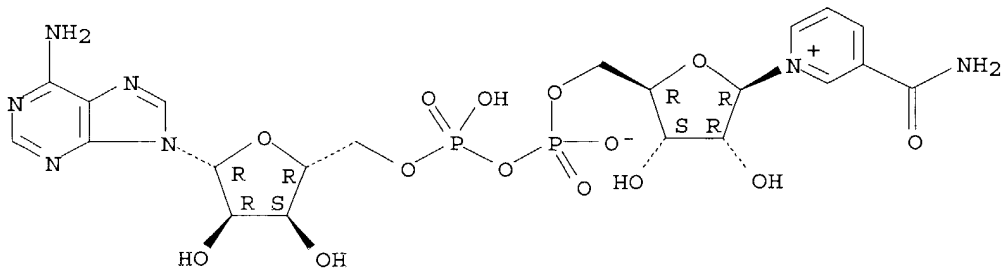
IT 7782-44-7, Oxygen, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(deficit; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT 50-99-7, D-Glucose, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(metabolism, defect; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

IT **53-84-9**, NAD **72-89-9**, **Acetyl CoA**
127-17-3, biological studies **541-15-1**, **Carnitine**
RL: **BAC (Biological activity or effector, except adverse)**; BSU (Biological study, unclassified); BUU (Biological use, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

RN 53-84-9 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with 3-(aminocarbonyl)-1-β-D-ribofuranosylpyridinium, inner salt (9CI) (CA INDEX NAME)

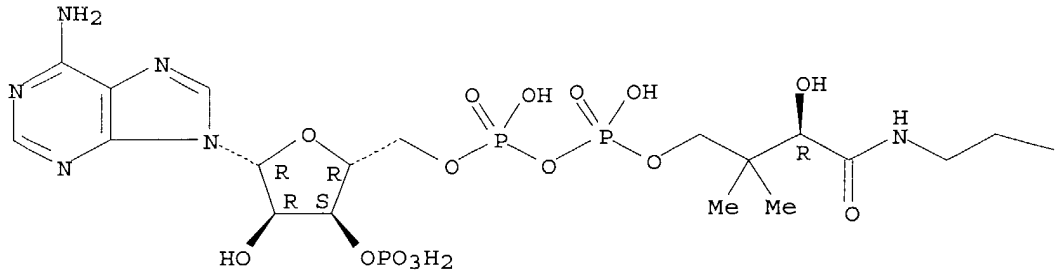
Absolute stereochemistry.



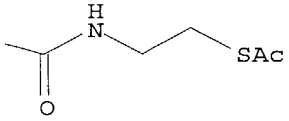
RN 72-89-9 HCAPLUS
CN Coenzyme A, S-acetate (6CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

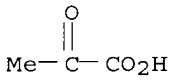
PAGE 1-A



PAGE 1-B

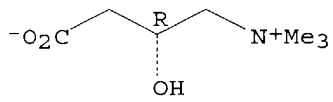


RN 127-17-3 HCAPLUS
CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



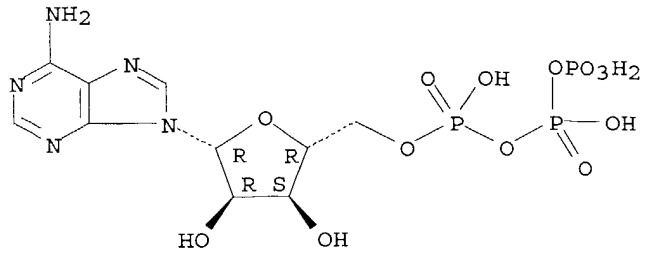
RN 541-15-1 HCAPLUS
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT **56-65-5**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
RN 56-65-5 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.


NH2
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